



Turn-by-turn navigation

Our turn-by-turn navigation system guides drivers by gentle vibrations in their shirt or seat. The intuitive vibration patterns indicate not only left and right, but give pre-warnings, signal roundabouts and junctions. This keeps a driver's eyes on the road.

- Distinct vibration patterns for all common navigation cues
- Keep eyes and ears free for the primary task of driving
- Reduces the risk of navigation mistakes
- Can be used as stand-alone app on a smartphone
- Can be connected to several existing navigation systems

"Keep a driver's eyes on the road"

How it works

Most (vehicle) navigation systems are based upon turn-by-turn navigation. The user selects an endpoint and the system calculates a route to get there. Navigation instructions inform the user whether to turn left or right. These systems provide information using a screen and voice assistance. In our system, the user receives navigation cues using gentle vibrations. Intuitive patterns are pre-set to be distinct between instructions.

Improved safety

The vibration cues reduce the driver's need to look at a visual display. Especially when he is getting used to the system, he will trust the signals without falling back on the visual representation. The driver can keep his eyes focused on the road, and this improves safety.

Improved navigation competence

Navigation cues by vibrations provide distinguishable information to users who already receive a lot of stimuli on other modalities (sight, hearing). The system reduces cognitive load for the driver, by re-distributing the cues from visual and audio channels. This means less stress, better reaction times* and thus less navigation mistakes.

Facts

- Tested with first responders in the Netherlands
- Proven reduction of reaction times and lower mental effort ratings*
- Available for Elitac hardware:
 - Car seat cover (available now)
 - Integrated car seat (available now)
 - OPSskin (Shirt, available now)
 - Custom hardware (requires GPS and compass module)
- Compatible with:
 - Android
 - iOS (on request only)
 - Several existing navigation systems (details on request)
- API for connecting existing (vehicle) information systems
- Price: Free**

* "Vibrotactile in-vehicle navigation system" J.B.F. Van Erp, H.A.H.C. Van Veen / Transportation Research Part F 7 (2004) 247-256

** In combination with Elitac hardware purchase. No warranties. Technical support is available at cost price. SLA and/or custom work upon request.