



# ExperienceLab

Design guidelines | GPS in-car  
navigation systems

Gemma Boguslawski

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Email: [gemma.boguslawski@serco.com](mailto:gemma.boguslawski@serco.com)

Tel: 020 7421 6484

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## Summary

Sercio ExperienceLab consultants researched in-car GPS navigation devices and conducted expert reviews on a leading manufacturer's product. The results were used to compile this set of guidelines to be used in conjunction with standard UI and usability guidelines throughout development of GPS products, in particular those designed to be used in-car.

In terms of in-car devices generally, good usability is essential to increase safety whilst driving. Many of these guidelines are aimed at keeping the driver's attention on the road by minimising distraction caused by poor design.

## Design Guidelines

### Optimise the interface for the primary functions

- Bear in mind that the user may want, or need, to use the device for navigation straight away. A short and concise version of operating instructions, either a small booklet/mini-guide or a guide accessed on the device itself, should be provided to enable this. A series of screen shots with accompanying explanation is very effective. It should be easy for the user to get to grips with the central functions and learn the other features later on.
- The main purpose of any navigation system is to guide the user to their chosen destination. Features such as Points of Interest (POI), traffic avoidance etc should be in a logical place but not prioritised over more common tasks.
- Take inspiration from mobile phone interfaces. Menu items should be indicated by icons large enough to be identified and selected at a glance, along with a word or two for identification.
- The screen should be sufficiently uncluttered to allow the user to take in information at a glance, minimising distraction from the road.
- Menu systems should be shallow enough to allow one to remember or quickly identify menu paths to use whilst driving.

### Ensure controls are suitable for in-car operation

- Controls should be tailored for use whilst driving. Complete touch screen operation is ideal for reducing attention taken from the road. However, touch screens must support finger control, as stylus control is not appropriate whilst driving.
- Any buttons should provide good tactile or audible feedback so the user does not have to look at the screen to see that the action has been carried out.
- The main screen should show a 3D map of the route, which acts as a simplified version of the immediate surrounding area. The current position should be indicated in some way, and should dynamically follow progress.
- Functions that may be needed whilst driving should be accessible from this main screen, for example repeat last voice instruction.

## Entering destination information should be flexible

- Users may expect to enter destination information in a similar way to online route planners, such as those provided by the RAC and AA. It should be possible to search for the destination location via any line of the address, including the postcode.
- Provide a way for users to browse to find a destination, perhaps by manipulating an on-screen map.
- Cater for instances where the user may not have an exact destination in mind. For instance, they may just want to travel to the centre of a city or town, without knowing a street name or postcode.

## Provide voice guidance en-route

- Voice guided features increase the users' confidence in the product and help keep eyes on the road. It should be possible to follow the route by using just the voice instructions.
- Generally, each voice instruction should contain the following information:
  - Distance to next action e.g. '400 yards'
  - What the next action is e.g. 'turn right'
  - Whether the action occurs at a roundabout or junction
- It should be easy to manually repeat the most recent voice instruction. This function should be intuitively placed so that the user does not have to examine the screen.
- The distance at which the next instruction is given should reflect the speed of travel. More warning should be given at motorway junctions compared to urban areas.
- Allowing the user to choose the dialect, language and gender from a range of options, is preferable. However, the user should be able to remove unnecessary options from the memory to save space for extra maps etc.

## Extra features should add functionality

- The user should be able to take a diversion without having to manually update information. The device should adapt to the new route and should not resort to instructing the user to turn around.
- Personalisation is important to increase functionality. It is useful to save a home location, and a variety of favourite locations for quick start-ups.
- When the device is switched on, the last selected route should automatically load. This allows for forward planning without having to keep the device switched on, conserving battery life and enabling a quick start-up.
- In exceptional circumstances, the device should make allowances for long-term road works, such as those on the M25. The user may need to change lanes earlier to compensate in these situations.

## Keep the user informed about system resources

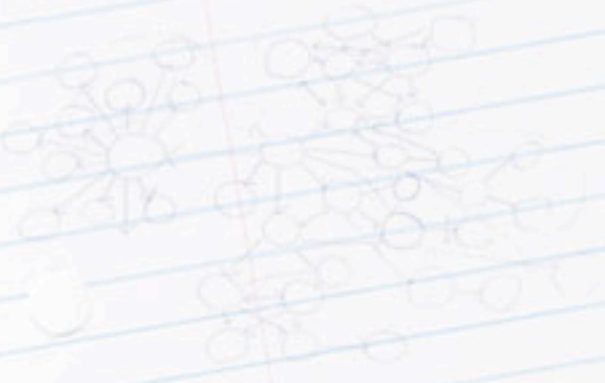
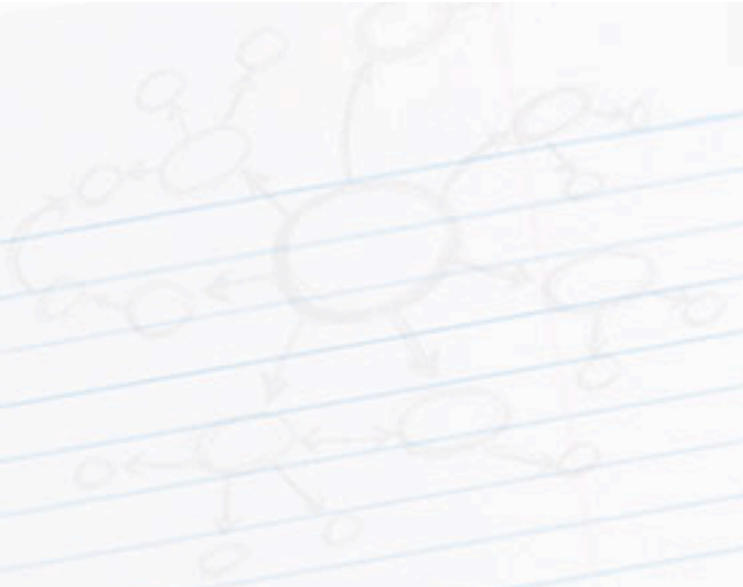
- If the device is portable and requires batteries, provide users with a clear indication of battery status on the main view.
- Similarly, provide users with a clear indication of GPS signal strength, so users can troubleshoot any gaps in instructions at a glance. If there is no GPS signal, provide a clear visual indication of this.

### *About ExperienceLab*

ExperienceLab (formerly Serco Usability Services), are a global experience design research agency. They help organisations optimise their customer experiences, from web to TV and mobile, from advertising to physical environments. They've been doing this for a while, pretty much since the first computers and networks were created, so they know a thing or two about how to make people, processes and technologies work in harmony.

ExperienceLab use a wide range of techniques to tailor a research solution that fits your business objective, including ideation sessions, proposition analysis, customer needs mapping, usability testing, benchmarking and touch point integration studies. As a co-founder of the UXalliance we also provide research on a global scale.

Why not visit the ExperienceLab blog ([www.experiencelab.info](http://www.experiencelab.info)), which features the latest thinking on experience design issues.



**Serco ExperienceLab**

22 Hand Court

London

WC1V 6JF

+44 (0)20 7421 6499

[info@experience-lab.co.uk](mailto:info@experience-lab.co.uk)

[www.serco.com/experiencelab](http://www.serco.com/experiencelab)

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