

# Observer Speech Tool

You are now armed with a set of tools that can allow you to drive your wheelchair while delegating other responsibilities to the chair, but that can leave you with a problem: how do you know when you're in control of the chair, and when the chair has taken over the control itself? For example, you have your switch plugged into *Forwards; Timed* tool selected and *Bump and Turn* on. You bump into something and your chair stops, backs off and turns - who's done what?

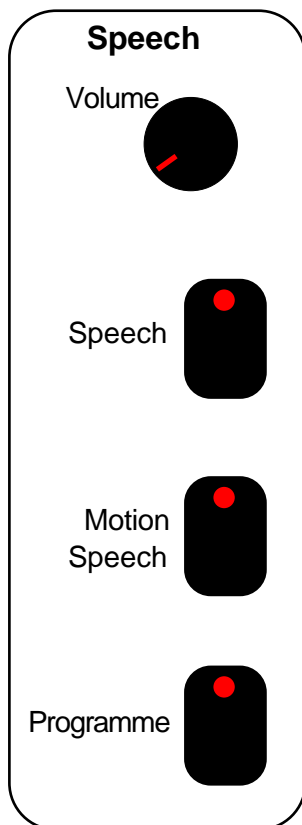
The Smart Wheelchair has a tool which watches the operation of the chair and reports back using a speech synthesiser - we call it the **Observer**. The Observer will tell you when certain events occur, for example "Oops, I have hit something!", when a Bump occurs; "Found line" when a line is encountered; or "I am going forwards", when a forward command is given. The Observer also uses the Scanner lights to give choices and indicate options.

There are several other reasons why we might want this facility:

- to provide reinforcing feedback when a user is learning to use the system. In the early stages of use, this is very helpful in explaining the chair's actions to a new user;
- as a first introduction to communication using an artificial voice;
- to encourage communication using voice output, by choosing functionally useful communicative contexts and messages, i.e. so that the user communicates not by selecting from a display (although this would be the eventual aim), but by driving the chair into the situations where the messages are generated;
- as a warning that the chair is moving - for example, if there are children with a visual impairment, and/or learning difficulties nearby.

The table below gives some currently stored contexts and messages.

<u>Context and Event</u>	<u>Message</u>
Forward	"I am going forwards"
Back	"I am going back"
Left	"I am turning left"
Right	"I am turning right"
Stop	"I am stopping"
Bump and Stop	"Oops, I have hit something"
Bump and Reverse	"Oops, I have hit something. I'll try to back off."
Bump and Turn	"Oops, I have hit something I'll try to back off and turn left"
Encountering line	"Found Line"
Leaving line	"Lost Line"



The volume knob sets the speech volume.

The speech can be turned off completely by pressing the *Speech* switch on the ToolBox.

Certain Observer messages can be turned on or off depending on what you require or how annoying they get. The motion speech can be turned off with the *Motion Speech* switch on the ToolBox so the chair won't say 'I am going forward', 'I am stopping' etc but will still report collisions or finding the line.

The Programme switch is used to set speeds and distances - use it with care, and refer to Section 5 before you change anything.

The Observer also reports which tools have been selected when you turn on or when you change them. This can be turned off by holding the *Stop* switch down when you power the chair on. When you change tool settings, the Observer won't report it. To turn this reporting on again switch off and hold the *Stop* switch down again as you turn the chair on..