



## **New Concepts for Future Wristwatch Design**

Rachel Eardley, Richard Hull, Jenny Hyams, Michael Lamming,  
Rachel Murphy, Abigail Sellen  
Consumer Applications and Systems Laboratory  
HP Laboratories Bristol  
HPL-2004-126  
August 4, 2004\*

E-mail: [firstname.lastname@hp.com](mailto:firstname.lastname@hp.com)

In a world of increasingly networked, portable and personal technology, the wristwatch of the future could take on many new forms, and offer many different functions and features. This catalogue illustrates some possibilities for new wristwatch concepts given quite a broad design brief: namely, what useful or interesting things might one want to be able to do with a wristwatch in the Digital Age? This catalogue begins to explore some of these new ideas by combining user-driven insights with design input.



## New Concepts for Future Wristwatch Design

May 04

Rachel Eardley Richard Hull Jenny Hyams  
Mik Lamming Rachel Murphy Abigail Sellen

Hewlett-Packard Labs, Bristol.



# Introduction

Over the last decade, the trend toward personal, portable computing and communication has seen major developments in various kinds of new technology, most notably mobile phones, laptop and tablet computers, and palm-sized personal computers. The mobile phone, in particular, has exemplified the often emotional and personal connection people make with technological artefacts that are at once very much “at hand” and which keep them connected to others in the world. Both the mobile phone as well as the computer industry recognises that there may be many other interesting directions in which personal technologies might be developed.

The wristwatch is already such a technology, being an artefact which many of us own and wear: an object we might not leave the house without, one which we might feel great personal and sentimental attachment to, one which is both a fashion statement in its own right, but also an object which is useful and functional. As such, the wristwatch offers itself up as a technology that might be reconfigured and re-conceptualised in the Digital Age. In a world where such an object can be networked, conferred with computing capabilities, and given new display and control features, the wristwatch of the future could be many new and different things.

This catalogue illustrates some new concepts given quite a broad design brief: namely, what could the wristwatch of the future be in this world of new possibilities? What useful or interesting things might one want to be able to do with a technology that is both ubiquitous and has an intimate connection to its wearer? This catalogue begins to explore some of these new ideas by combining user-driven insights with design input.



# Contents

Introduction	Pages i
Contents	Pages ii
Inspiration <b>Watch</b>	Pages 1-2
Info <b>Watch</b>	Pages 3-4
Image Reminders <b>Watch</b>	Pages 5-6
Shop <b>Watch</b>	Pages 7-8
Backpackers' <b>Watch</b>	Pages 9-10
Mood <b>Watch</b>	Pages 11-12
Digital Wallet <b>Watch</b>	Pages 13-14
Webcam <b>Watch</b>	Pages 15-16
Family Awareness <b>Watch</b>	Pages 17-18
Landmark Reminder <b>Watch</b>	Pages 19-20
Team Gym <b>Watch</b>	Pages 21-22
Baby Monitor <b>Watch</b>	Pages 23-24
Acknowledgments	Pages 25

# Inspiration Watch

Select a friend or family member



View personal gallery



Shopping Trip



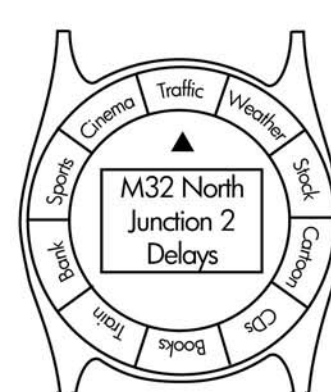
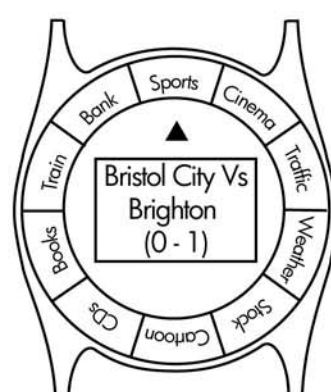
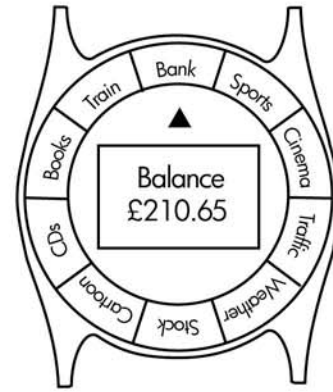
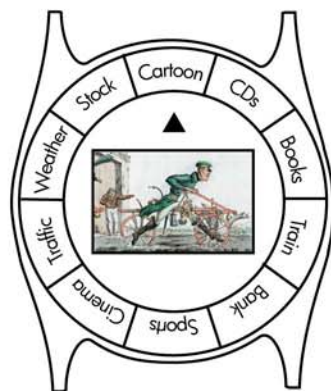
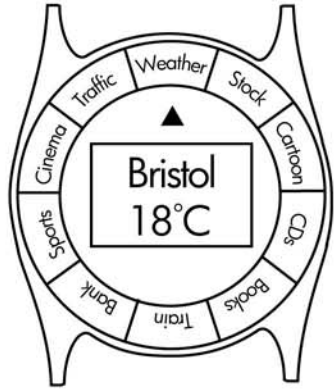


# Inspiration Watch

Intended to support shopping, this wristwatch presents a series of images to help inspire and suggest gifts for particular people. Through the watch, the wearer can connect with and view a collection of images that reflect the tastes, interests or personalities of friends or family members. These images are compiled from people's own personal galleries of images that they have already selected as those that they like, or feel reflects something about them. Perusing and selecting from image collections to add to one's own personal profile is something which wearers of the Inspiration Watch can do anytime, any place.







# Info Watch

The Info Watch is a wristwatch wirelessly connected to the web that allows the wearer to quickly and easily access small amounts of web-based information that one visits or monitors frequently. This could be textual information such as weather forecasts or stock quotes, or images such as a particular view from a webcam a favourite cartoon, or a new image from a friend's image gallery. The owner of the Info Watch pre-sets the sites, and specifies the information they want to access through specialised software. Thereafter, they simply turn the bevelled dial on the watch to quickly access and display the updated information or image from any of these favourite sites.

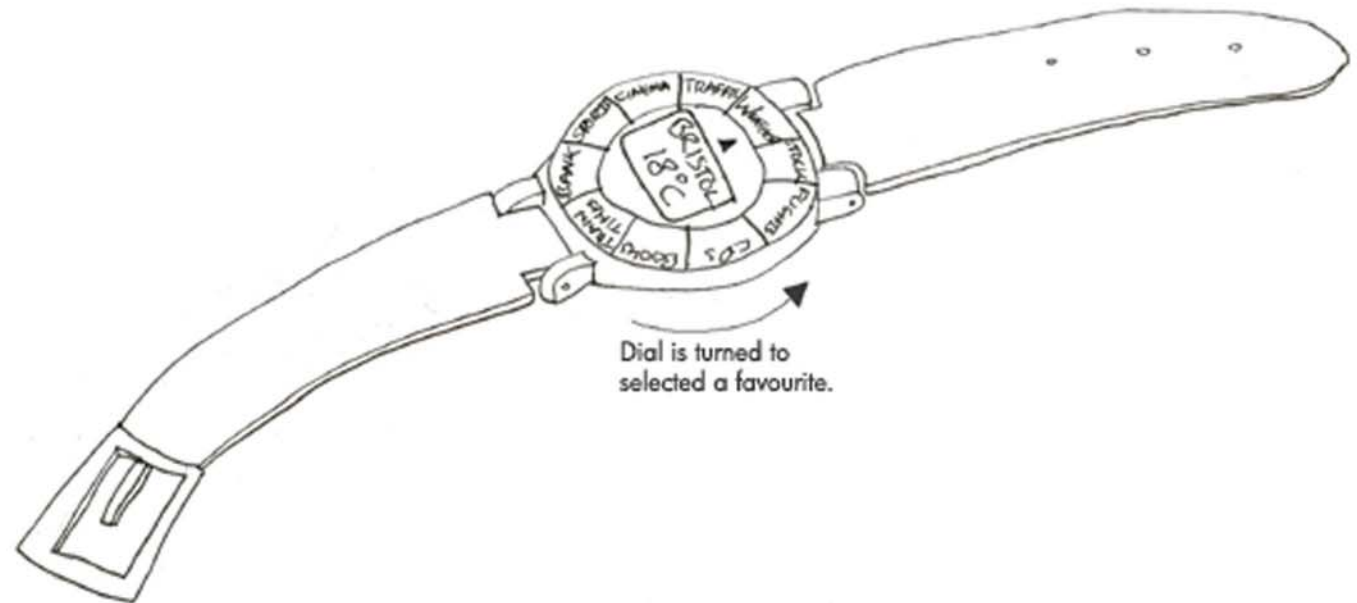


Image Reminder Watch

Sunday						
Monday						
Tuesday						
Wednesday Wedding Anniversary						
Thursday						



# Image Reminder Watch

The Image Reminder Watch displays images of friends and family in advance of significant events in order to remind the wearer of upcoming birthdays, anniversaries or other special occasions associated with that person. Intended to be non-intrusive, the image of the person concerned gently fades in and out a few days prior to the special event. These image-based reminders can either be sent by the person concerned, or pre-set through special software by the owner of the Image Reminder Watch. These photos of people can also be associated with a collection of inspirational images to support gift buying as described earlier in the Inspiration Watch concept.



## Advert Capture



## Music Capture



## Bookmark Selection

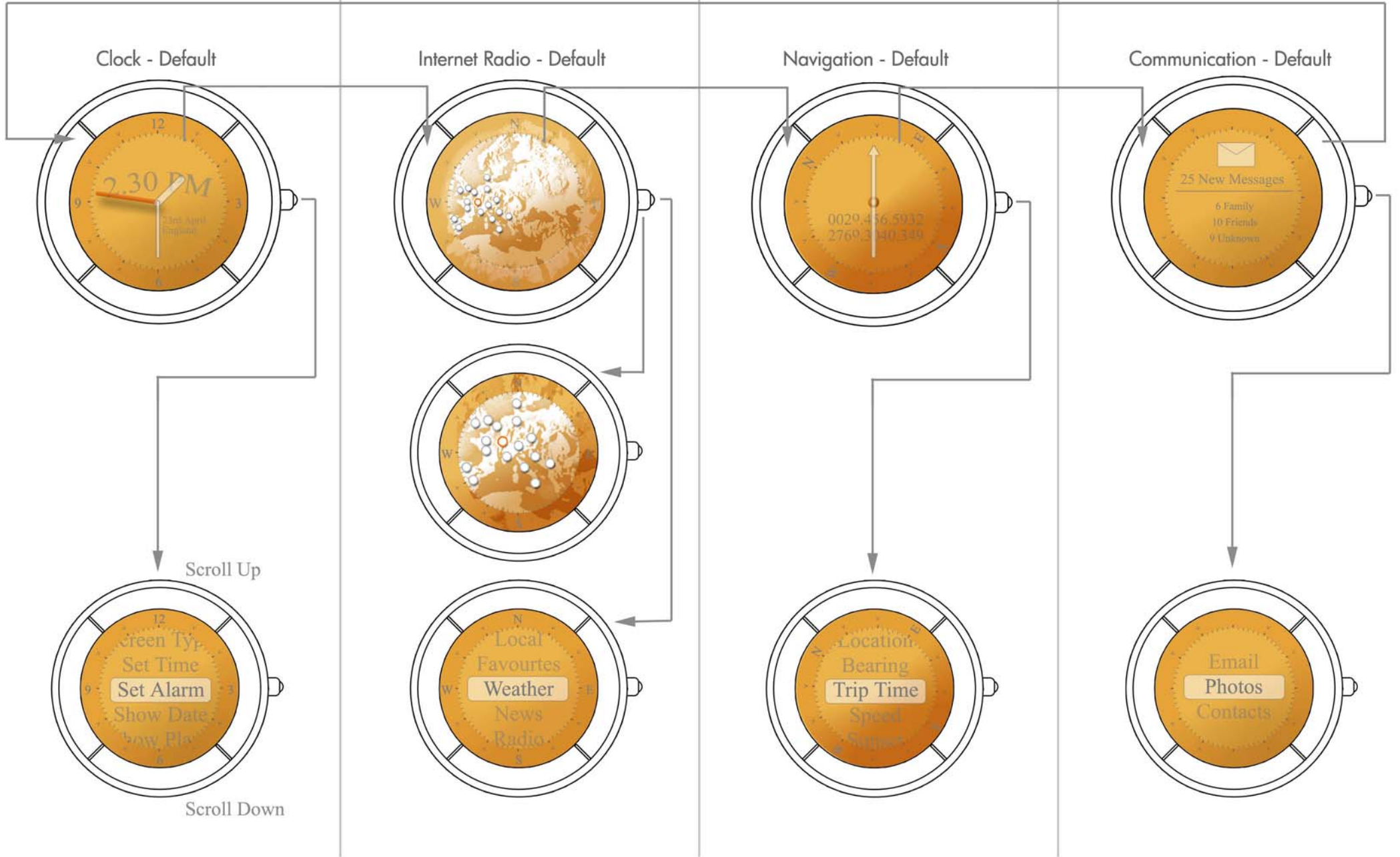


# Shop Watch

The Shop Watch is a watch concept that allows you to capture and buy media that you come across or experience in your day to day life. For example, it allows you to bookmark and buy music you hear in a restaurant, a DVD advertised in a film poster, or a book you might see reviewed in a magazine. The Shop Watch is wirelessly connected to the web where it accesses a growing database of music tracks, films titles or magazine articles. This tagged information is recalled through audio or physical RFID markers read by the watch. The watch then receives and stores the digital bookmark which can be accessed later at home where the user can choose to delete or buy the bookmarked item.



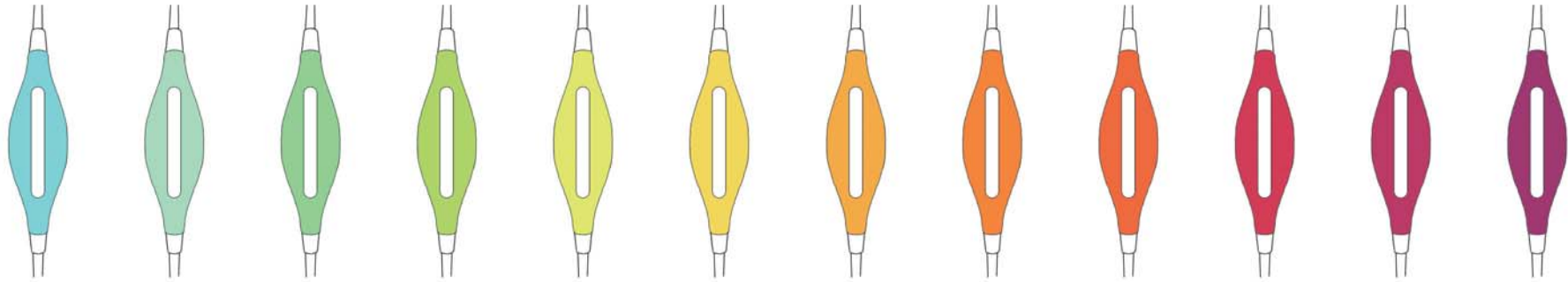




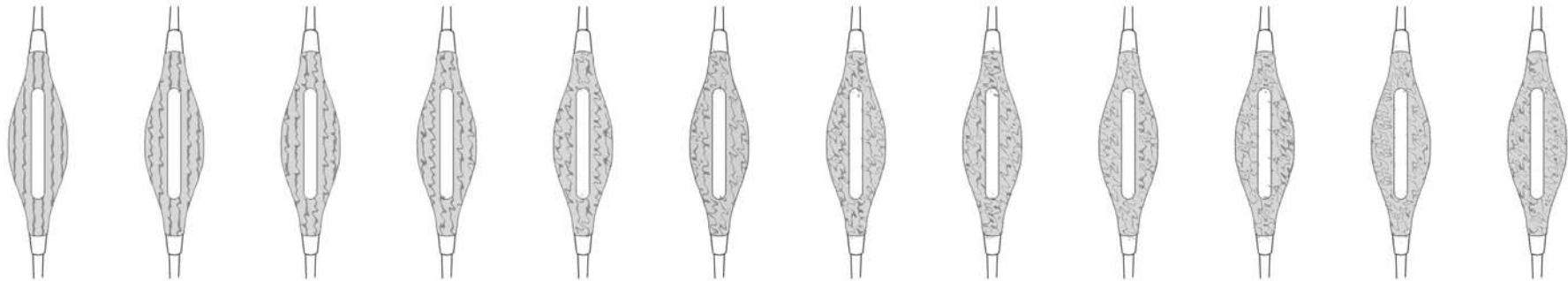
# Backpackers' Watch

The Backpackers' Watch is a wristwatch for the world traveller that allows the wearer to tune into news and music from any digital radio station in the world via an internet connection. This watch displays a globe which users rotate using four navigation buttons around the dial, zooming into local areas using the wristwatch winder. Using this watch, backpackers can tune into the news and music from home to feel more connected with home. Or they can tune in to local stations to get a better sense of their new location. Other functions include a digital compass using GPS technology, a trip timer, an at-a-glance email reader, a photo display and a contacts list. Change of mode is accomplished by pushing on the watch face.

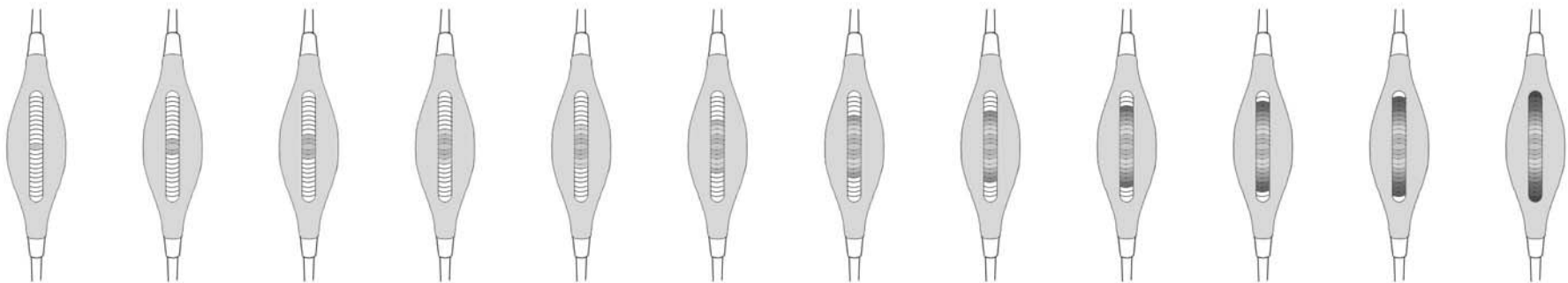




Skin Resistance



Heart Rate

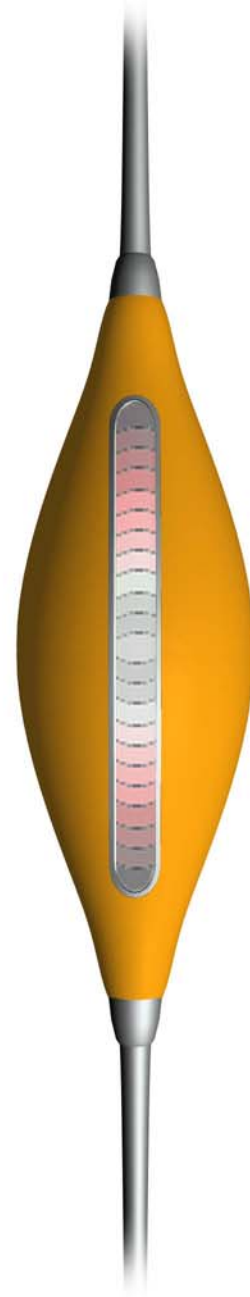


Time



# Mood Watch

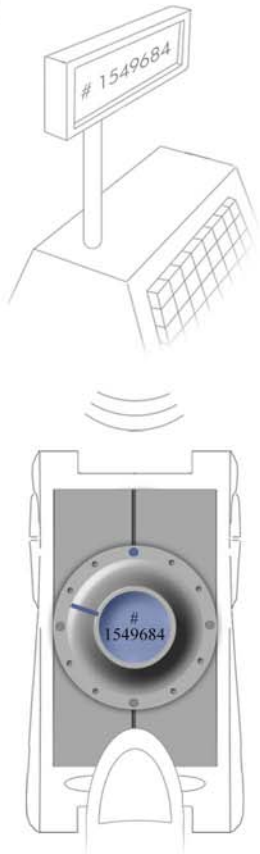
The Mood Watch is essentially a piece of jewellery that reacts to and displays the wearer's mood. Sensors in the Mood Watch capture skin resistance and heartbeat data. These measures are translated into changes in the colour and texture displayed on the watch. In addition, time is displayed in an approximate way, through a series of bands or rings that alter and change in saturation through the course of the day.



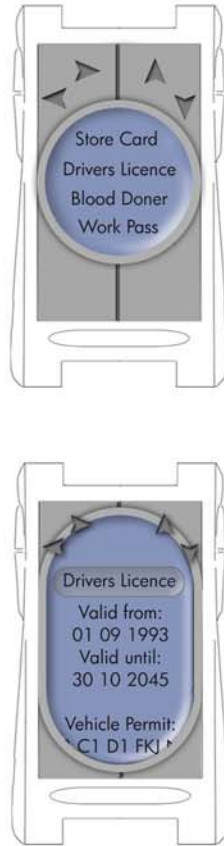
# Digital Wallet Watch



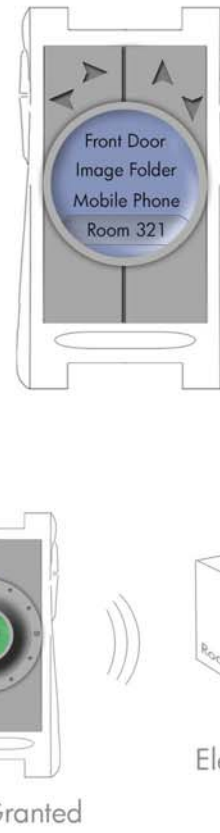
## Money



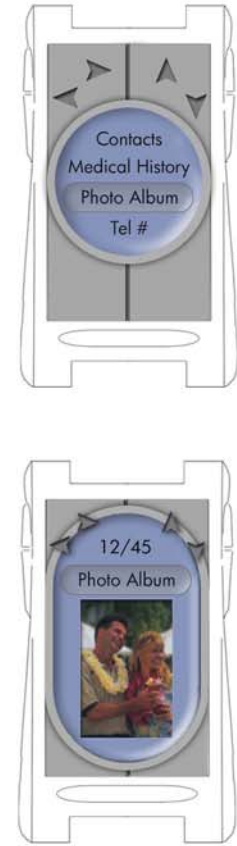
## I.D.



## Access



## Personal

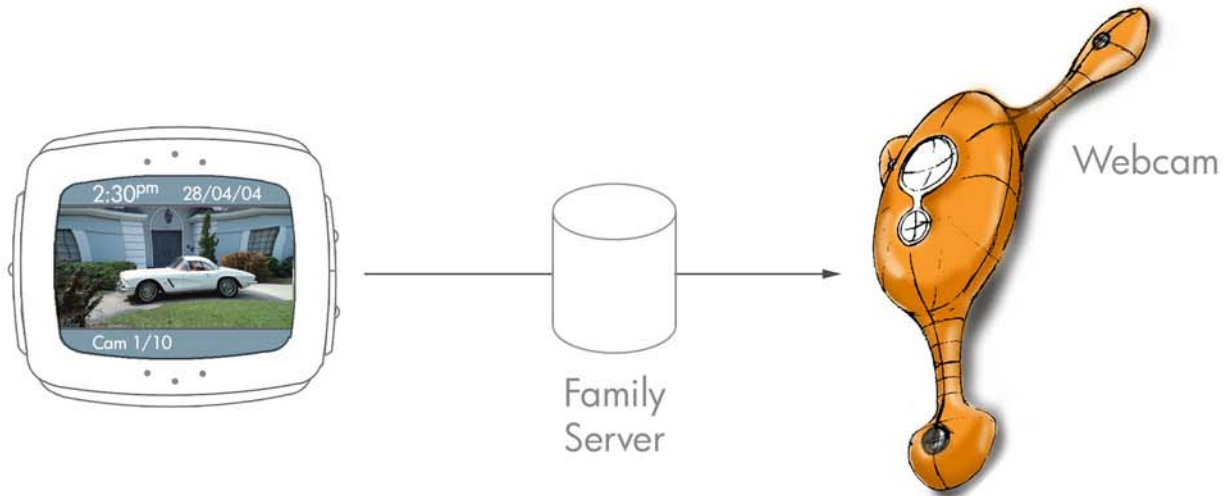


# Digital Wallet Watch

This concept is essentially the digital equivalent of a conventional wallet, containing information and allowing access to the things that normal wallets allow access to. The Digital Wallet Watch allows digital payment through wireless connection with services in shops and restaurants. The wearer can also access personal details and information such as membership numbers, licences, details of loyalty cards, and even medical information. It also contains electronic "keys" which allow you to open doors and unlock devices to which you are allowed access at work, home and even on the move. In addition, the Digital Wallet holds personal memorabilia such as favourite photos to display and keep just as one would in a normal wallet.

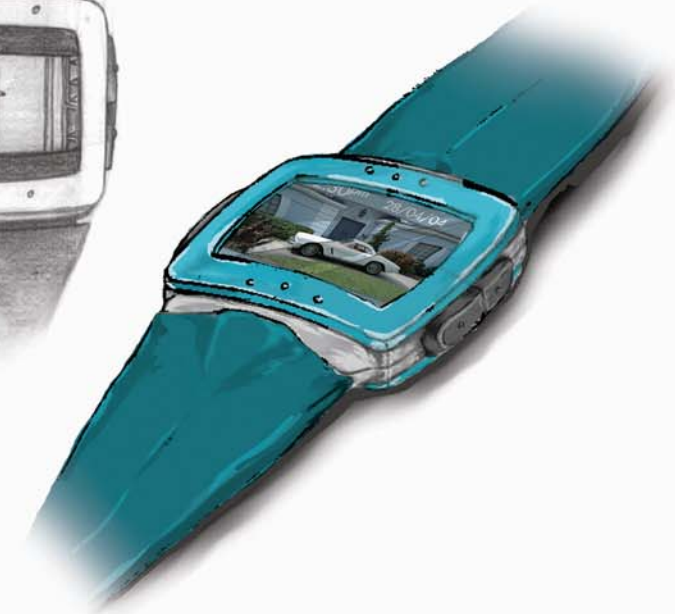
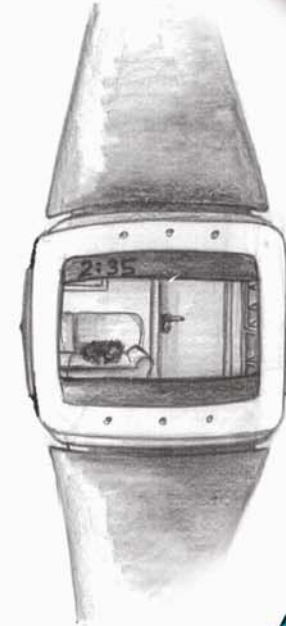
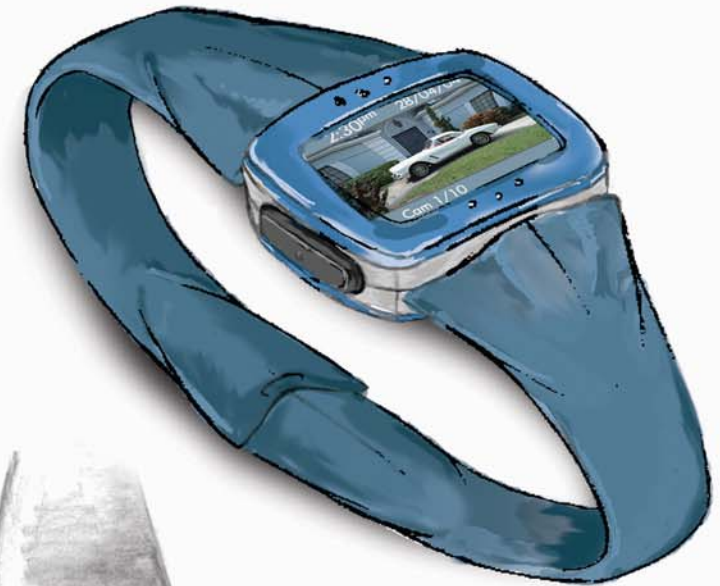






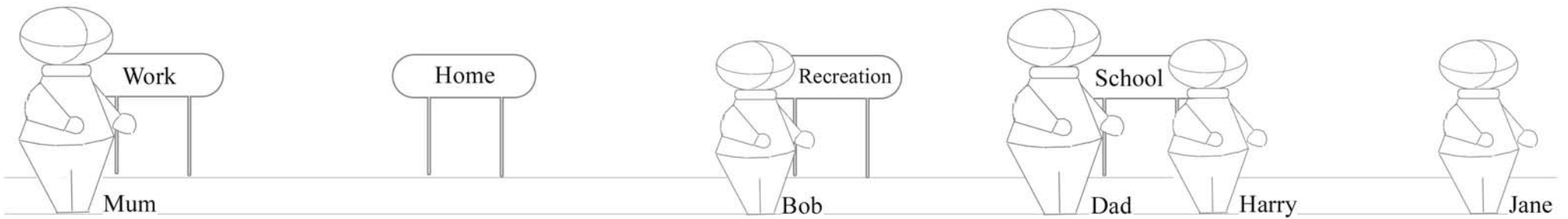
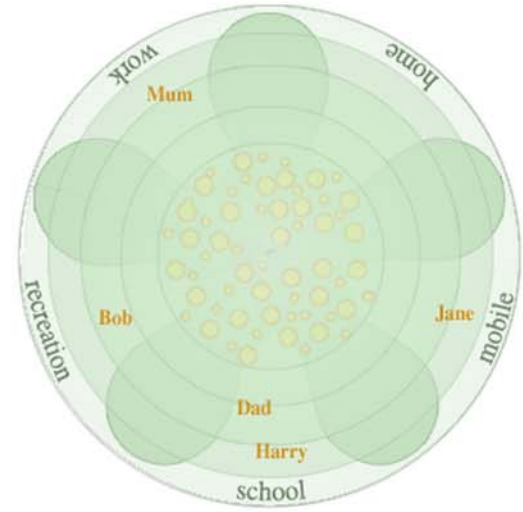
# Webcam Watch

The Webcam Watch is a window onto a series of personal or public Webcams that the wearer wants to see. For example, the owner of the Webcam Watch might have several webcams placed around their home that they securely connect to, allowing them to quickly see people and places in the home environment through its display. They might want to be able to monitor the front door if they are expecting a visitor or a delivery, keep an eye on the kitchen if they want to know when someone arrives home, watch possessions such as their car for security reasons, or look at their baby or pet to feel more connected to home. The Webcam has the added capability of allowing the wearer to capture images with a simple button press, allowing repeated viewing or storing of an image.



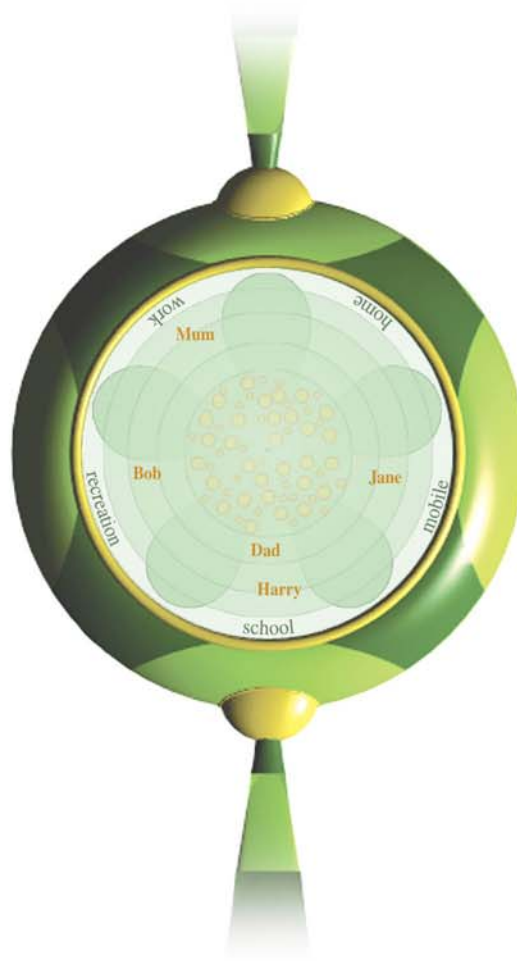


clicking watch face

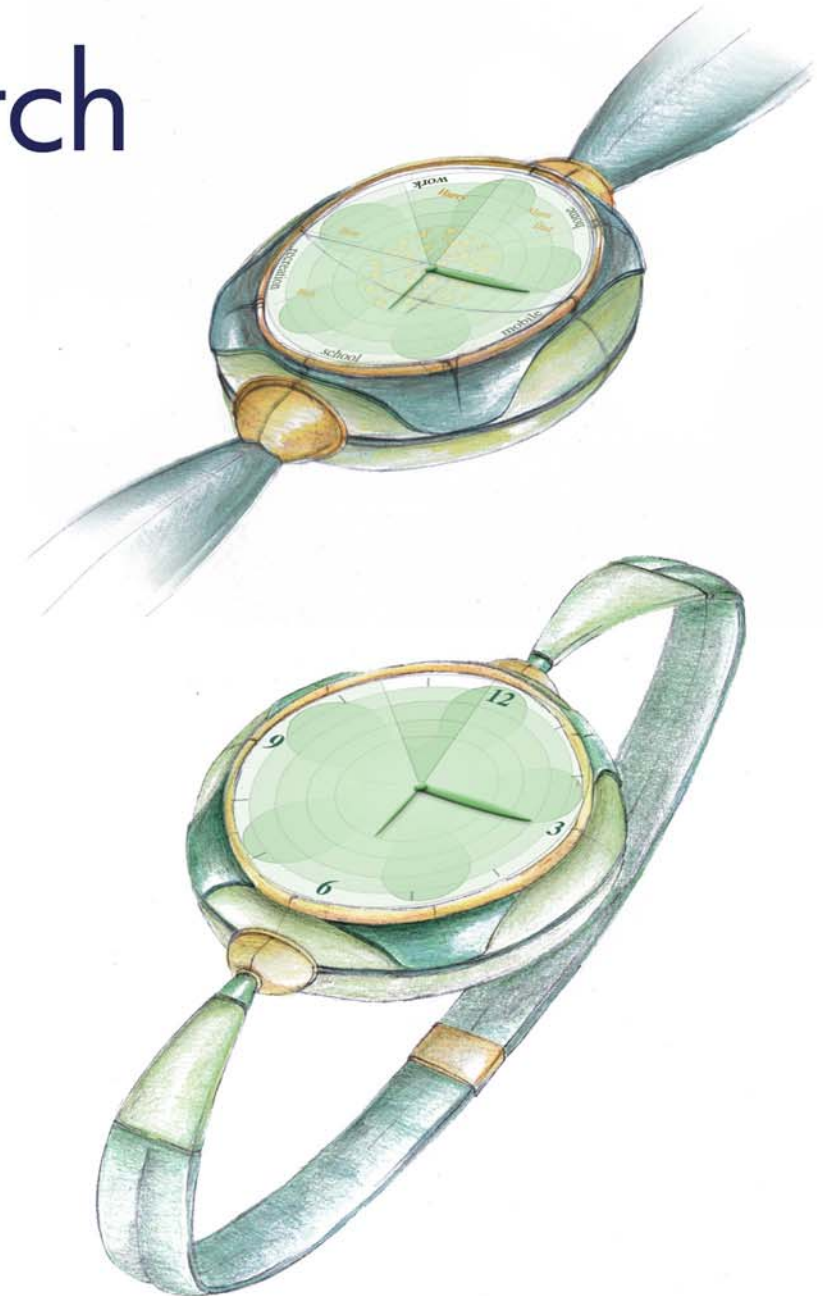




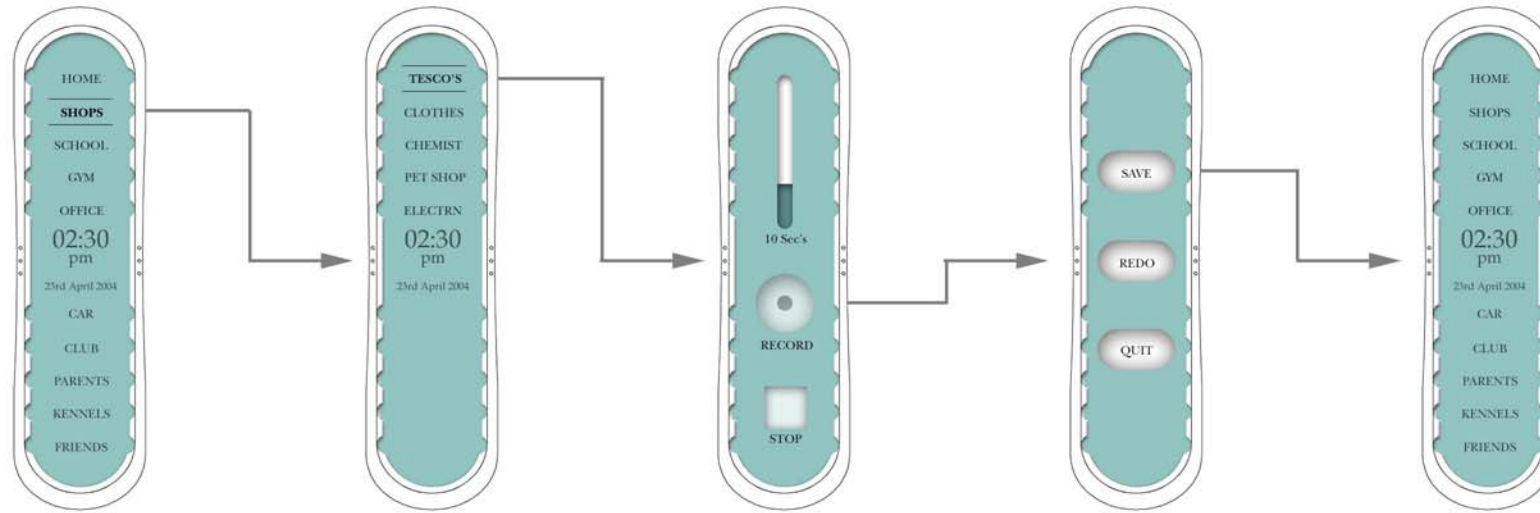
# Family Awareness Watch



The Family Awareness Watch allows the wearer to keep track of and maintain awareness of the locations of other family members. This helps, for example, a parent plan when to have a meal ready, provides peace of mind that a child has made it safely to school, or allows families to plan and delegate tasks such as shopping when a parent has left work and is on their way home. Each family owns a set of such GPS-enabled watches. By clicking on the watch face, the watch switches to a mode in which one can quickly see at a glance where other members of the family are. It does this in a very general sense, for example showing that an individual family member is at 'Home', 'Mobile' at 'Work' or at 'School'.



## Program Reminder



## Reminder Activation



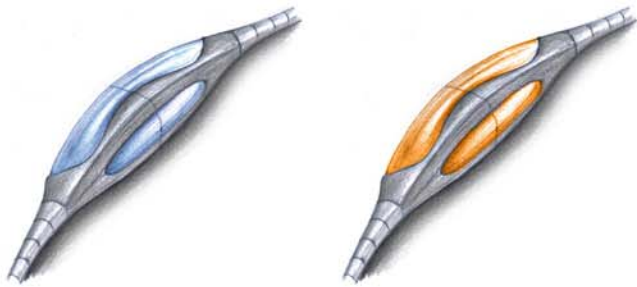
# Landmark Reminder Watch

This watch allows people to quickly and easily set reminders for themselves by taking advantage of the fact that most people have particular places or "landmark" locations in their lives. These landmark locations, such as home, work, school, the supermarket and the gym, are not only significant places in people's daily activities, but they are also places where it may be important to receive reminders. So for example, it might be important to remember to pick up a form next time you visit the school, or to order some tickets for an event when you get home, or to make some particular phone calls next time you go to your office. This concept is different from other reminding applications in that the watch has software that tracks the locations that a person visits most frequently. These landmark locations are then offered to the wearer as potential places to link with reminders. The watch then allows you to quickly record an audio message to yourself which is then automatically triggered either the next time you arrive at that location, or at a pre-specified time.



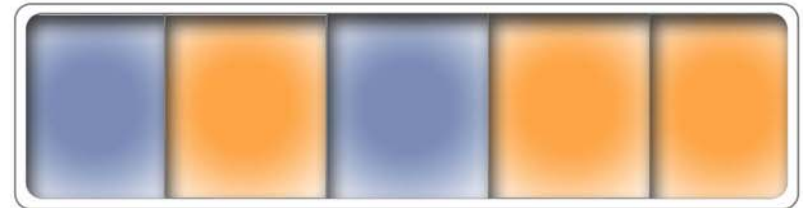
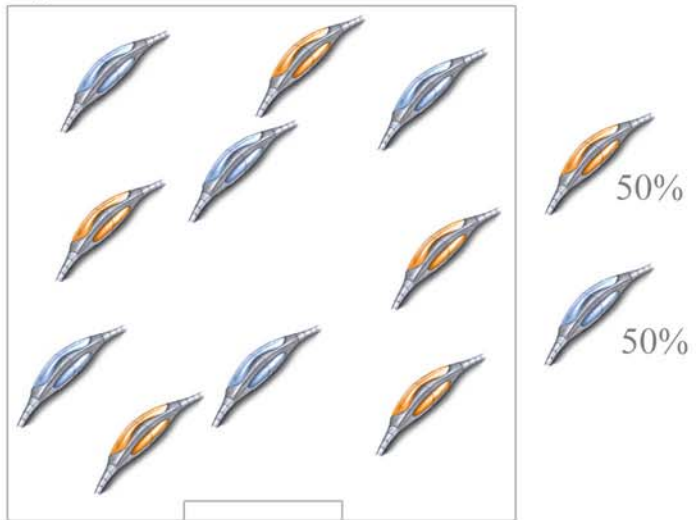


Team Colours



Team Server

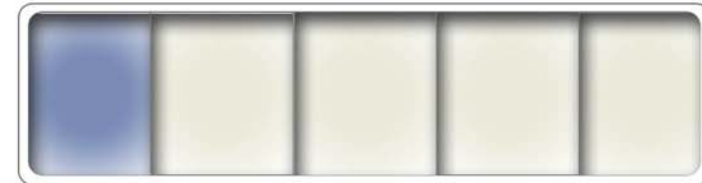
Gym



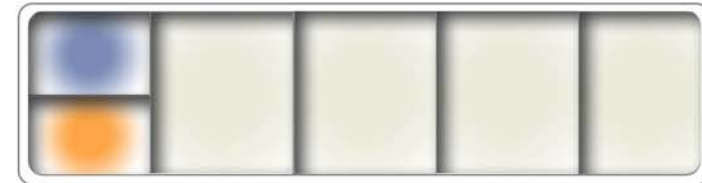
Time



Active Winner



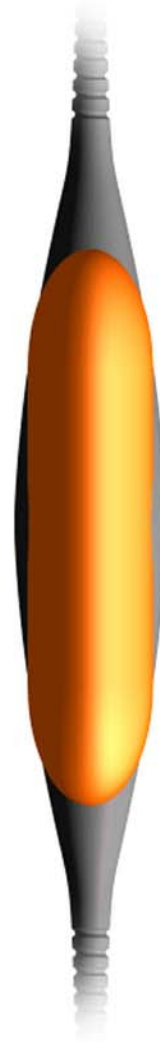
Win



Draw

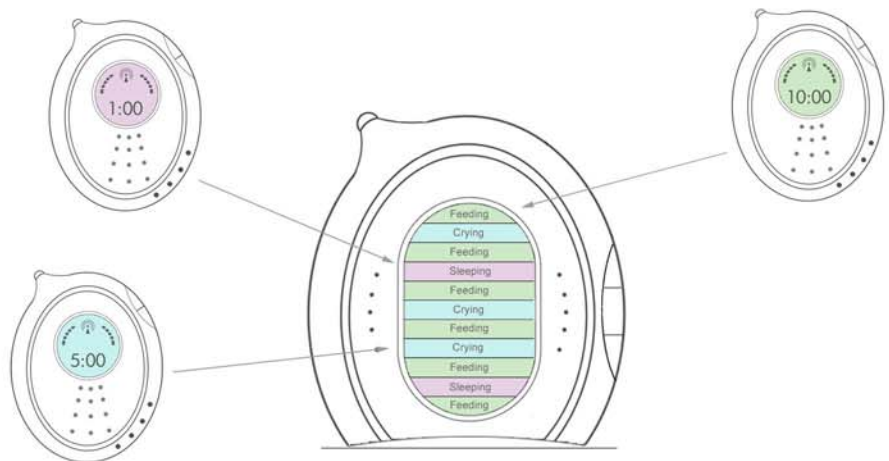
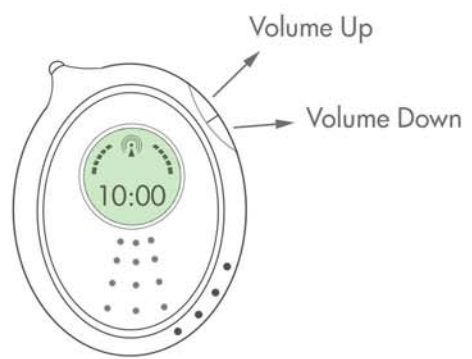
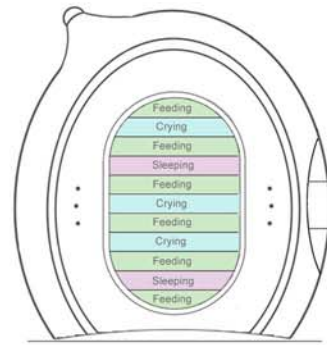
# Team Gym Watch

This wristwatch supports team participation in gym classes by wirelessly connecting and aggregating biometric data such as heart rate data from groups of people in a space. For example, each member of the class collects a wristwatch at the beginning of the class, the class being split into two teams: e.g the orange or the blue team. Each team works to compete for colour domination of a visual display at the front of the room, or ambient feedback through lighting changes in the room. Class time might be divided into five segments, each being won, lost or drawn based on the group data for each team.



# Baby Monitor Watch

Day am pm



# Baby Monitor Watch

This watch is one that allows parents greater mobility in and about the house, and even away from the house (if the baby is looked after by another carer). This concept is essentially a more sophisticated version of a baby monitor which allows parents to listen for a baby waking or crying. This watch not only allows access to audio activity remotely through wireless networks, but captures and logs that activity to give a history of what the baby did during the course of the day. Audio activity gets processed as periods of sleep, feeding and crying. This way, a parent can look back over the amount of sleep their baby had during the course of the day as well as the time of the baby's last feed. This kind of information is important for planning ahead for the baby's care, and also allows a parent to look back over a longer time period to see how the baby changes and develops in terms of their sleeping and feeding habits.





# Acknowledgments

With Thanks To:

Ben Clayton Eric Geelhoed John Honniball Paul Marsh Tom Melamed and Phil Stenton.