

oribotics [network]

Oribotics = ori + bot = fold + robot
Network = local/virtual/internet

network designing principles

In oribotics network we are seeking to leverage the power of available technological network layers. In particular www, wifi, gsm, bluetooth and the physical layers. The purpose is to create a robot that is interconnected to its local and global environment, to provide the robot with the means to communicate and receive communication/information from data and human sources.

The outcome should be a robot that seems more alive, and globally aware. It is a static robot, rooted in the location of its planting, but its oribotic motion, LED status lights, and online or sms feedback will reveal its awareness.

It is also a robot with limited energy and resources. The solar panels charging its batteries are not always illuminated by sunlight, and downtimes, or reduced activity should be included in the program cycles. For permanent installations in low sunlight areas, AC mains power can be used.

design aims

To find economical, and simple solutions, by making small building blocks for the larger system.

To develop a network which has ecological values, based on the study of nature, in both form and behaviour.

network diagram

The network diagram describes the technological network layers, the communication that occurs on each layer, and a brief description of the key objects, their expected locations in the layers, and their functions.

Oribot/s

Pending final designs, its clearly envisioned that oribots have:

multiple servo's - firgelli micro linear actuators, that are synchronised.

multiple leds - showing status - communicating with the viewer status of messages received, current power supply, and energy state.

light, heat, motion sensors for sensing proximity of humans.

solar power cells

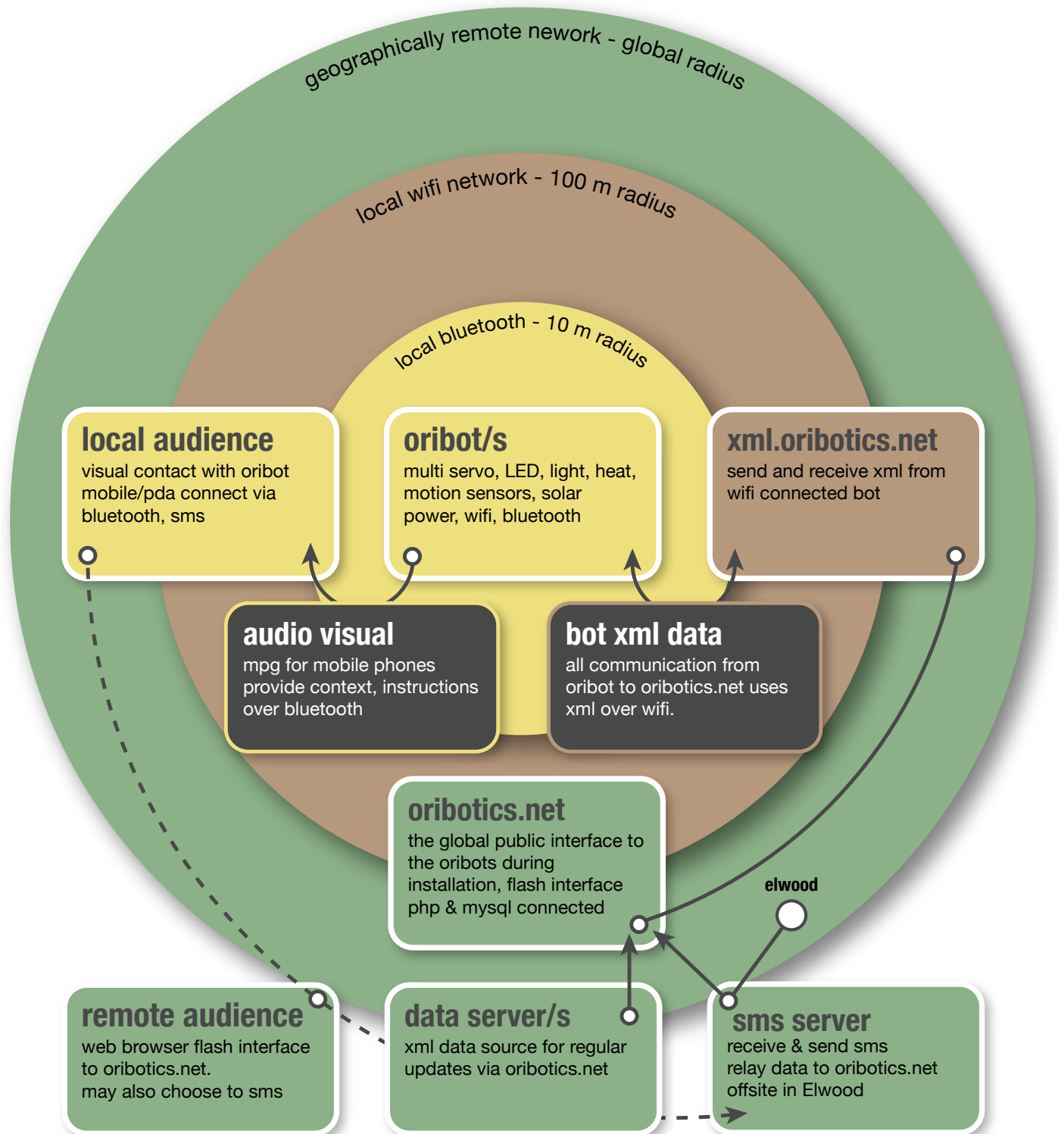
mobile phone battery / or other small size, high powered battery, or AC power.

bluetooth module - allowing transmission of audio visual data to passing users. This alerts the audience within visual contact to the artworks presence, and requests a session with the bluetooth module to download the video instruction material.

bluetooth module extension; it is conceivable that a java application might also be an option for download, the java application runs on the users handset, and grants them control over features of the oribots.

wifi - each bot has a wifi module allowing direct transmission of live data to and from the website <http://xml.oribotics.net>. Meaning, interaction with the local network via a PDA, or laptom, or interaction from a remote computer, can directly control an oribot.

network diagram



local audience

The local audience are the audience who can make visual contact with an oribot. They have the most options for interaction, via mobile/pda/laptop, using sms/www.

Their interaction will change the state of the oribot, triggering some feedback; a textual message, indicating the 'health' of the individual bot, to more subtle, behavioural changes in the robot itself, reflecting a global environmental state. The work will carry an underlying environmental message, revealing the relationship between the oribot, and the larger system it exists inside.

digest.oriobotics.net

An interactive server application which connects to RSS/XML feeds and consumes data according to criteria set by user interaction. Users assign nutritional value to keywords. This data is fed to the oribots via xml.oriobotics.net

xml.oriobotics.net

A unix based system which handles xml data connections between end user systems and the oribots. When any communication is made to or from the oribots, this website is the intermediary. This system can be local to the installation, or remote. The system runs the following essential services: MySQL database, apache2 httpd server, php5.

oriobotics.net

The interface for global audience interaction is a Macromedia/Adobe Flash based interactive application, which makes direct connection to xml.oriobotics.net, and allows a virtual view, and control of the physical/virtual artwork, with up to date status information, and a controller interface for manipulating the oribot.

Documentation of past installations, design iterations, blogs and information also exist on this site.

remote audience

The remote audience interacts with the website, and can send sms. Its most likely the remote audience will interact via the website.

Data servers

Data servers provide live xml feeds of environmental, or statistical information. Such as weather, stock prices, and scientific data. xml.oriobotics.net will make regular requests for xml data from a selection of servers to provide realworld data for the oribots.

Data servers (cont).

Oriobotics.net will also provide a local xml data stream for each robot connected to its network, so that the bots may behave relative to each other. The further implication of this stream is that other projects may reference this data, and further still, other oribotic installations will be able to access information from each other. So no matter where an oribot is installed, it can always communicate with its siblings.

sms server

The current sms server is a low cost mobile phone connected to a computer running a Java application, which collects new sms message from the phone as they arrive, and updates the MySQL database for further interpretive parsing. After the user command has been gathered by the parser, the command is queued and delivered to the oribot.

While the low cost to send the message is a benefit of the current solution, a profit generating solution with a premium sms service provider is a consideration.