About the project

My wife runs a hedgehog rescue in Otley, West Yorkshire. Last year we cared for over 150 hedgehogs and this year expect that number to be close to double. The ones released into our area are microchipped; this equates to around 100 hedgehogs with more being released each week now we right in the middle of the busy hedgehog season and would expect 150 chipped hedgehogs within Otley by the end of the year. We have chipped our releases in other areas such as Guiseley, Ilkley, Menston but for the moment Otley is our focus. If you are not local this is Leeds, West Yorkshire LS21 area.

There reason for chipping the hedgehogs is:

- To identify the ones that return to the rescue
- Identify how long hedgehogs are surviving for locally
- Gather statistical information for scientific research on areas such as dependency on human support feeding, frequency of use of hedgehog homes.
- To give members of the public a way of engaging with the hedgehogs remotely promoting support and awareness of hedgehog preservation.
- Raise awareness and a revenue stream for the rescue by the sale of the feeding stations or access to the system (not sure how either will work yet)

Aims of the project

- Be open source and reasonable cost to build (ideally under £50) we want schools, scouts etc to be able to build one.
- Engaging with the users via a website showing frequency of use and by which hog.
- Be low maintenance, reasonable tough and easy to clean
- Provide a database to keep our hedgehog records on (no finder contact information for GDPR)
- Easily updated in the future (I.e., clearly documented within any files)
- Show a visit of none chipped hedgehogs via light beam or similar (open to suggestions)

Useful links that inspired the project

http://www.hedgehogrepublic.org/

This is a great project, the system weighs (I'm dubious on accuracy when looking at fluctuations) the hedgehogs, records the sound, temperature, a short section of video, reads the micro chip. I think it actually weighs the hedgehog before and after eating so they know how much its eaten but it's not displayed. The Tech link on the website used to have working links to documents relating to the project. I've attached a copy of what info I have. There is a website to track the movement of the hedgehogs which is nice.

The downside to the project, each unit costs more than £750, needs a wired power supply and wired / wifi internet connection.

https://microidglobal.com/

This is our supplier of microchips. The product we use are:

10 Micro-ID 8mm Mini Microchip Syringe - Micro ID Ltd (microidglobal.com)

Microchips are injected into the rear left flank of the hedgehog.

We have a handheld halo scanner – readily available from amazon or through MicroID Global

LoRaWAN Network

https://www.thethingsnetwork.org/community/leeds-bradford/

This is the LoRaWAN network covering Leeds. The LoRaWAN receiver has been installed on the White House building on Otley Chevin, this is one of 30 units installed in Leeds postcode areas. This has been installed by Leeds City Council as part of a wider roll out by the Leeds Full Fibre Team. I've had several zoom meetings with Simon Cowen and James Glenton over the project and have been very helpful. Simon has tested the range of the receiver and has more than enough coverage for the whole of Otley and neighbouring towns. He also has some test sensors set up that we can look at. Simon's expertise is in OT/IT and are not programmers but happy to help where they can. There are lots of experienced people on The Things Network, and is a great resource, however it's one of those places you need to know somewhat what you are doing or have some technical knowledge to communicate effectively. This is beyond my ability.

Initial Development

To ensure the project is feasible the initial prototype development can take any form of software and hardware. It doesn't matter at this stage, we just need something that works, scans the hedgehog, integrates the sensors and LoRaWAN and will transmit the data and it is received and displayable in some form. From then on, we can look at developing it into something that is more refined using products that are cheaper / smaller / less power dependant / rechargeable.

This approach also allows the database and user interface development to progress from an early stage.

Component Selection

Open to suggestions here, but initially locally sourced products then as we home in on a solution we can start sourcing cheaper alternatives from Aliexpress etc that may take longer to procure. We don't really have a budget as such to develop this, but if you need components let me know and I'll procure personally.

Locations of trackers

Initially to generate interest and provide some level of basic information that has some scientific use I guestimate creating a grid of 16 units provided by the project in a roughly evenly distributed location. The map doesn't reflect the area covered as I had to zoom in a lot to get the properties to show up. I would like initially the units to be spaced roughly 250m apart, there is no scientific justification on this other then hedgehogs travel up to a mile or more an evening (meandering) so this will likely capture the same hedgehog on multiple units over time. As one of the aims of this project is to encourage passive interaction with the hedgehogs we would be offering the units for sale, or as an opensource kit for people to home build. I hope to kickstarter the project on behalf of Prickly Pigs however I'm not that far ahead to think about that yet.

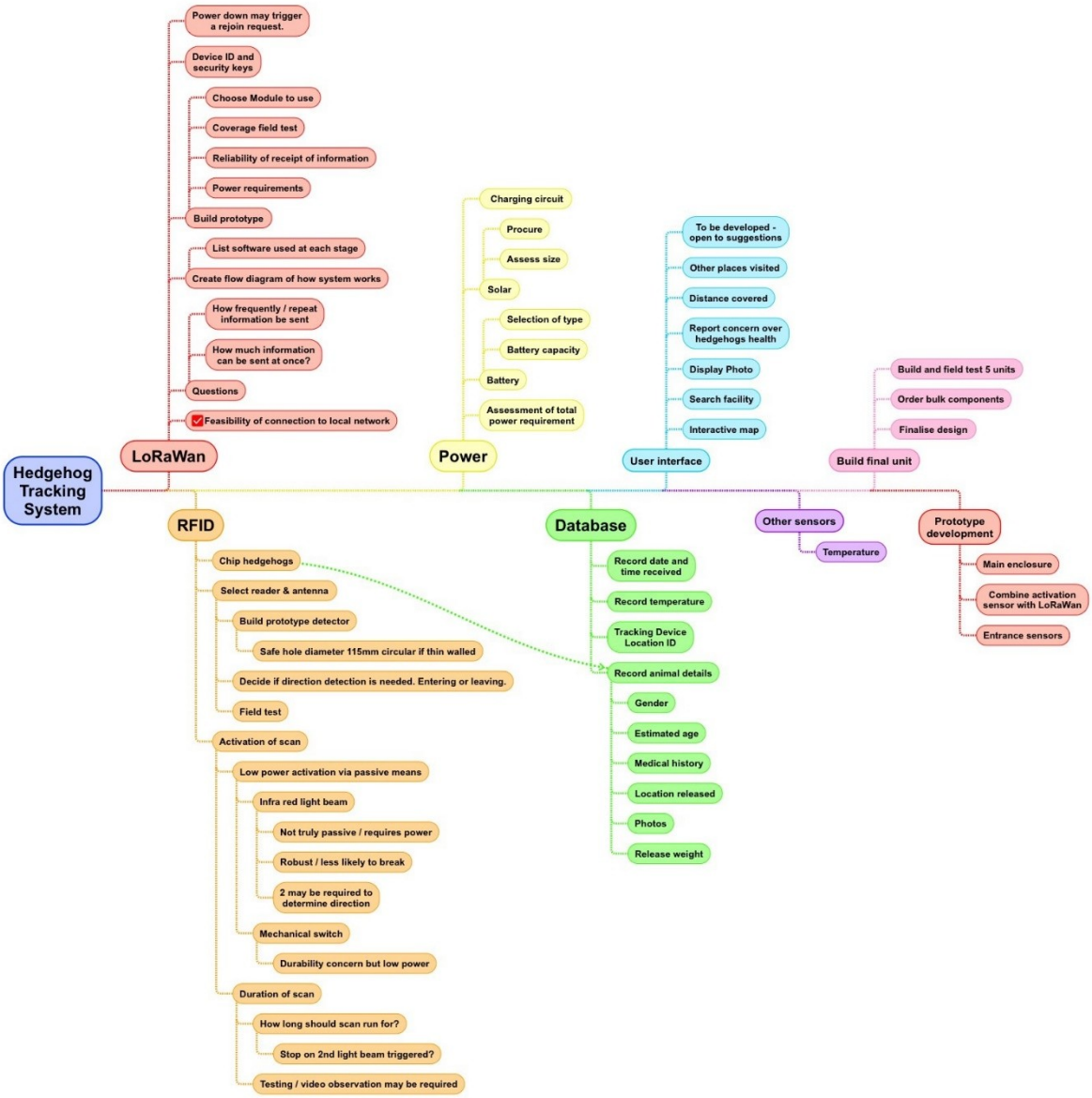
Although the initial focus is on feeding stations, I would like the system to be used on hedgehog nesting houses and hedgehog highways between gardens.

As we have released hedgehogs throughout all of Otley and have many devoted followers and feeders of hedgehogs I would expect have quite a few units spring up throughout the town. People who have rescued and then released back to their garden post treatment would love to know if their prickly friend is returning.

Once we have a demonstratable system the aim is to extend this system to multiple areas and offer it to other rescues.

Proposed development

There are lots of areas people can assist with, you don’t need to be an electrical wizard or programmer to make a difference. We need assistance with the web interface, inputting records, building the prototypes, promoting the service, finding sponsors etc. Let me know if you have ideas or way you can help.



If you have any questions my contact details are

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07943 110090 for whatsapp group.

Thanks Andy Cook on behalf of Prickly Pigs Hedgehog Rescue