LoRaWAN project Roadmap

Workshop date/time/location: 17th July 2023 / 13:00 – 16:00 / School of Geography reception, Garstang Building, University of Leeds, LS2 9JT.

Attendees: Paul Maddison, Carl Tinson, Simon Cowan, Jonathan Moxon, Steph Bond, Martin Stephenson, Nicole Taylor, Sam Ramsden, Phil James, Kirk Robinson

Apologies: Henry Hargreaves

Agenda
1. Governance
    a. Team membership & roles
2. Team aims.
    a. Identify key questions and focus
    b. What will the deliverables be?
    c. Are there any dependencies/synergies between Team aims?
3. Roadmap/Gantt chart (10 weeks max)

Governance
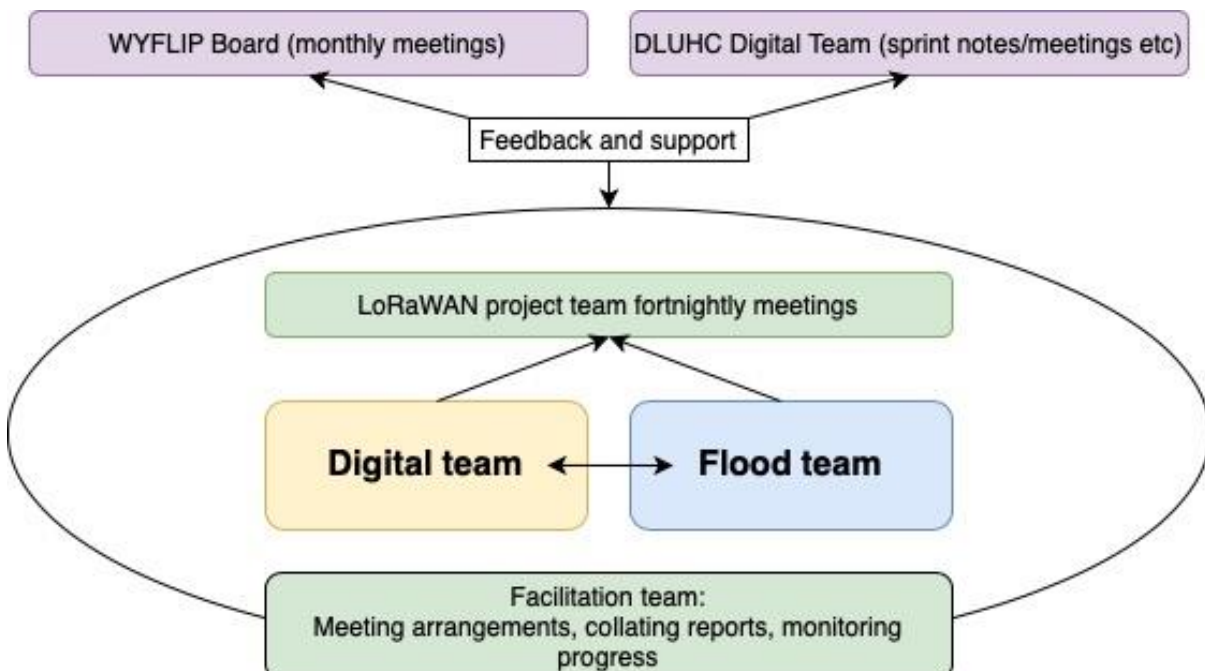
Team	Member	Role
Flood	Paul Maddison	Team lead/Project lead
Flood	Jonathan Moxon	
Flood	Martin Stephenson	
Flood	Nicole Taylor	
Facilitation	Henry Hargreaves	
Facilitation	Steph Bond	Facilitation lead
Facilitation	Sam Ramsden	
Digital	Simon Cowan	
Digital	Zoe Pattinson	
Digital	Carl Tinson	Team Lead

Key questions to be answered during this LoRaWAN digital discovery project

Digital team questions:

The network:

1. What is a LoRaWAN network?
2. What are the requirements for the LoRaWAN to operate?
3. What are the limitations/constraints of the LoRaWAN?
4. What kind of data can the LoRaWAN receive? How is that data currently processed and how could it be optimally processed?
5. What platform is used to access the data?
6. Breakdown of costs involved (set-up/maintenance/monitoring)
7. Current status of the LoRaWAN in each LA (presence/extent of use)

Compatibility/shareability between LAs:

8. Can different LA networks 'speak' to each other?
9. Could different LAs 'share' a network and who would manage it as a central resource?
10. What maintenance/monitoring/funding is required if it was managed centrally?

Gateways & sensors:

11. How are gateways/sensors powered?
12. What are the coverage limits? (map output?)
13. Which locations are best? Could we produce a regional strategic plan for gateway placement? (map output)

Data:

14. Can data be shared? Permissions/legality/compatibility between systems
15. What level of transparency should the data have? (outside of each LA)
16. How would we store the data?
17. Cyber security – what considerations should be made? How does that compare to different LA expectations?

Digital Team Action:
- Contact LAs who have current knowledge of the LoRaWAN. Do they have insight into the above questions?
  Suggestions of LAs: York, Swindon, Sunderland, Norfolk – what learning do they have to share?

Flood team questions:

Flooding problems/current outlook:

1. What are the key flooding issues in our region? (Surface water? – 1 key issue per LA)
2. What solutions already exist to respond to flooding? What type of systems-based approaches already exist? (e.g. EA data)
3. Are there locations which are most impacted by the key flood issues? Use incident data to map this. What other data could be used? (Output: hotspots map)

Flood response:

4. Which services/people would benefit most from access to real-time flood data?
5. What specific information do those services need in order to respond? Are services dependant on other factors before they can act? We spend a lot of time 'reacting' – can we reduce the response time through data?

Data required:

6. What format is best to receive data information? What data is needed to drive actions? (Simple location only or more specifics?)
7. How is best to get this information? Targeted contact? Questionnaires? Workshop?

Flood team Action:
- Make an evidence list of 'hotspot' places.
  Considerations: If we categorise data we can split the work between us to ensure a good area coverage. We should prioritise the issues. What scale do we make the calls at?

Digital-Flood Team crossover questions:

1. What kind of data would be useful for potential future analysis? (e.g. for planning/to support grant applications)
2. How would a system recognise baseline vs 'changed' data? (e.g., raised water levels)
3. What options are there for alerts to be created in response to changed data? Where should alerts be sent and in what format?
4. How can this system maximise efficiencies?
5. Is LoRaWAN the best way forward? Is it different enough from current systems, is it better?

Project Deliverables:

1. Two workshops; one with service providers (emergency planning, councillors, call centres for flood alerts) and one with residents.
- *A possible 3rd workshop will be undertaken with Academics in week 8 to review the business case draft based on experience of flood warning systems elsewhere globally.*
- *Consideration: We could ask the EA to facilitate discussion through the flood warden network (flood warden seminar? An hour as part of their session?)*
2. Business case with recommendations for LoRaWAN delivery.

Project Process:

Planned start date: 4th September

iCASP will:
- Undertake interviews with the project team members to determine answers to the project questions detailed above & disseminate answers into a report/business case
- Project manage communication between team members via meeting set-up
- Coordinate & facilitate workshops
- Write a first draft business case to be reviewed and amended by Team members

Flood & Digital Team members will:
- Coordinate data requirements within their own LAs for mapping outputs
- Contact other LAs to investigate LoRaWAN use
- Review and provide feedback on all outputs produced

Table 1: Gantt chart of expected project timeline. SP=Service Providers, R=Residents, A=Academics. Planned start date: 4th September.

	September				October				November	
Week	1	2	3	4	5	6	7	8	9	10
Workshops				SP		R		A?		
Team Interviews										
Mapping (Flood hotspots & LoRaWAN gateway locations)										
Contact LAs for LoRaWAN knowledge outside of West Yorkshire										
Business case write-up & review										