Work Agreement
Smart Hydro

This is a formal work agreement that will go over the fair of work balance for individuals involved in Smart Hydro as well as the goal of the project.

Group Members

Below will show the members involved as well as the roles that will be allocated to them however, they will all contribute where necessary even if it is out of their role for the greater good of the team. For example, Shravan Ramjathan is listed as a backend developer but when needed, will assist in front-end development or even documentation/research.

Number	Full Name	Graduating students	Student Number
1	Shravan Ramjathan	Project Manager/Backend Dev	ST10247982
2	Shivar Tuplah	Backend Dev	ST10256115
3	Vidur Girish Somaru	Front End Dev	ST10263794
4	Keagen Shaw	Product Manager	ST10067958
5	Shaymen Kista	Documentation Lead	ST10312252
6	Paayal Rakesh	Research Business Analyst	ST10368727
7	Ahmed Vally	Hardware Engineer	ST10251131

Source: Team Role subject to change

Roles and responsibilities

Project Manager

Will oversee planning, organizing, communicating and resources to ensure project completion. This also entails creating schedules for the team to follow as making sure that they are being met. This also has to do with making sure everything is up to standard.

Backend developer

Will be tasked with maintaining the source code of the project as well as maintaining business logic ensuring functionality of the system. Deals with the server-side logic and dealing with databases management.

Frontend developer

They are tasked with the look and feel of the application that the clients will work with. They will be tasked by implementing a modern easy to use design on the application as well as making sure the UI works with the server-side logic.

Product manager

They oversee managing the overall theme and campaign of the project. Communicating with the project manager to make sure that clients' needs are being met, and that quality is up to standard.

Documentation lead

They are responsible for ensuring each part of the project is being documented, from requirements to changes, meetings etc. They will collaborate directly with the project manager and the research members for what is going on.

Research Business Analyst

They will be responsible for gathering information that can steer the development of the project. They will also be helping the developers to get an insight on things for example, dependencies, technologies, etc. By having someone dedicated to research it also helps speed up the documentation process by making decisions easier.

Hardware engineer

They will be responsible for ensuring the sensors work as well as make sure that the tunnel system is properly implemented. They will help the developers in terms of communicating with the micro-controllers and assist with testing the physical components of the tunnel system like the camera for example.

Purpose

The purpose of this project is to ensure that we can automate the farming process not only for commercial scaled use but also to allow for farmers in the rural area to be able to have access to affordable, easy to maintain tools.

The job that we will aim to fill within this development cycle will be to complete the ongoing project of Smart Hydro by firstly working with the system ensuring that we are able to optimize the already programmed code base. The previous iteration of the mobile application was not able to be deployed since it took up a great amount of storage space on a device, which would not be desirable to logistically suitable to cater for everyone's needs or devices.

From there once we can optimise the app down from the current state, the next step will be to take the project further and develop the next phase of it. This will be our ongoing development trying our best to use the machine learning model provided by the Post Graduate student who is training a model that will be able to detect whether there are traces of bugs or not.
Our main goal will be to implement this system within the project and create further QoL (Quality of Life) updates to the project.

Communication

In terms of how things will be announced to the team, we will be using WhatsApp as our primary source of pinging messages to the team but regarding meetings we will be using Microsoft Teams. Teams will serve as our central place of posting updates for documentation/events. Everything will be formally announced here, and reminder emails will be sent out to the group followed by back up messages on WhatsApp to make sure everyone is on the same page.

In terms of meetings, we will go for a hybrid strategy involving in-person meetings with the team as well as the sponsor and having teams' meetings. Every meeting, a different member will be assigned to do minutes of meetings to make sure everyone is involved at every stage.

Decision making

Tasks will be spread evenly across the team according to external commitments, deadlines and quality of work will not only be checked by Project Manager but by the whole team. Every individual has a fair right to give their thoughts on changes or features and it will be upon voting in which decisions will be made besides the project managers vote. The project

manager (Shravan Ramjathan – ST10247982) will then take these ideas/suggestions into account and try to go with the option that best suits the teams' goals as well as the projects requirements.

There will be meetings set in place to make bigger decisions where things will be finalized and hereby documented.

Workload distribution

This will be meticulously set out by the project manager, who will consider for any commitments or obstacles that the team will encounter along the way as a group and as individuals.

This will be handled in the following thought process:

1. Who is available at x time and who is not?
2. What are the strengths and weaknesses of the individuals?
3. What tasks can be carried out within this time frame?
4. What is the priority level for this task?
5. If its urgent and a greater task, split it amongst a few members.
6. Avoid giving set tasks to individuals, rotate it so that everyone has equal input.
7. Account for unforeseen issues to help stay on schedule.
8. Create secondary deadlines that are achievable. Whoever is on task needs to get the work done by the secondary deadline before the real time of requirement.

The real distribution of work

This will be handled using GitHub projects, where a member of the group will be assigned to do a specific task in a certain period. This will be as follows:

- An issue is drawn up and uploaded to GitHub projects for a specific repository to document work.
- An iteration (time frame) will be assigned
- A label will be assigned (for example, documentation)
- A description of what is expected for the issue
- Where the work needs to be pushed on GitHub
- Physical work done will still be documented in terms of what has been done and who was involved. This will be in the documentation repository.

This will be some of the ways in which it will be handled and are subject to change.

Timelines

In terms of timelines, we can break this down into 2 categories:

1. Hardware

The team will be working between campus hours which is 8 am – 12 pm. Unless there is a major deadline for the physical components, the team will not be required to work after hours.

2. Software

Monday – Friday at any time of the day. The reason for this is, we are not strictly governed with updating code as that can be done remotely for the codebase via github.

Conflict resolution

This will be handled in multiple phases. This allows everyone in the group to understand how things will be handled and the formalities that are in place. This is to minimize any internal conflicts that can get in the way of the focus being the project.

Phase 1 - Verbal warning

First this will be handled by the project manager having a talk with any parties involved in conflict. Trying to understand both points, which the parties involved must try to compromise if possible as we must not involve personal issues with the group setting as this interrupts everyone.

Phase 2 – Written warning

If this does not work, It will then move to the next phase where the conflict will be documented only for the groups viewing. This allows the involved parties to understand the seriousness of this and if conflict is not to be resolved, consequences will follow.

Phase 3 – Group meeting

This is where the entire group will try to get involved by resolving the conflict. This is because at this stage, while the conflict may not involve all members of the group, it will affect the rest of the group's productivity, hence all members will have a meeting trying to calm the situation down.

Signatures

This document will be signed counterpart to everyone with the project manager, meaning that you will each sign separately. First being the person this document is addressed to, next signed by the project manager ensuring that the addressed person agreed to the role and project.

This will tie you to agree till the 31st of December 2025.

I, hereby agree to all the details that have been mentioned, and I intend to carry out my contractual obligations. I will diligently contribute to the group. I understand the scope of what's to come and will act in best accordance with the group to ensure completion of the project.

I understand the role I have been appointed and am also aware that I will be required at times to help in other aspects of the group that are out of my roles scope. I understand that this is to allow for each group member to be involved equally within the group.

If I were to slack within the group, I understand that I am responsible for my actions and if I am unable to properly comply with the project manager and the group, I will face the consequences of my actions.

Signature of agreement	Date of Signature (dd-mm-yyyy)
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Project Manager

_____	_____