

# iFPGA - Intermittent Intelligent FPGA Platform

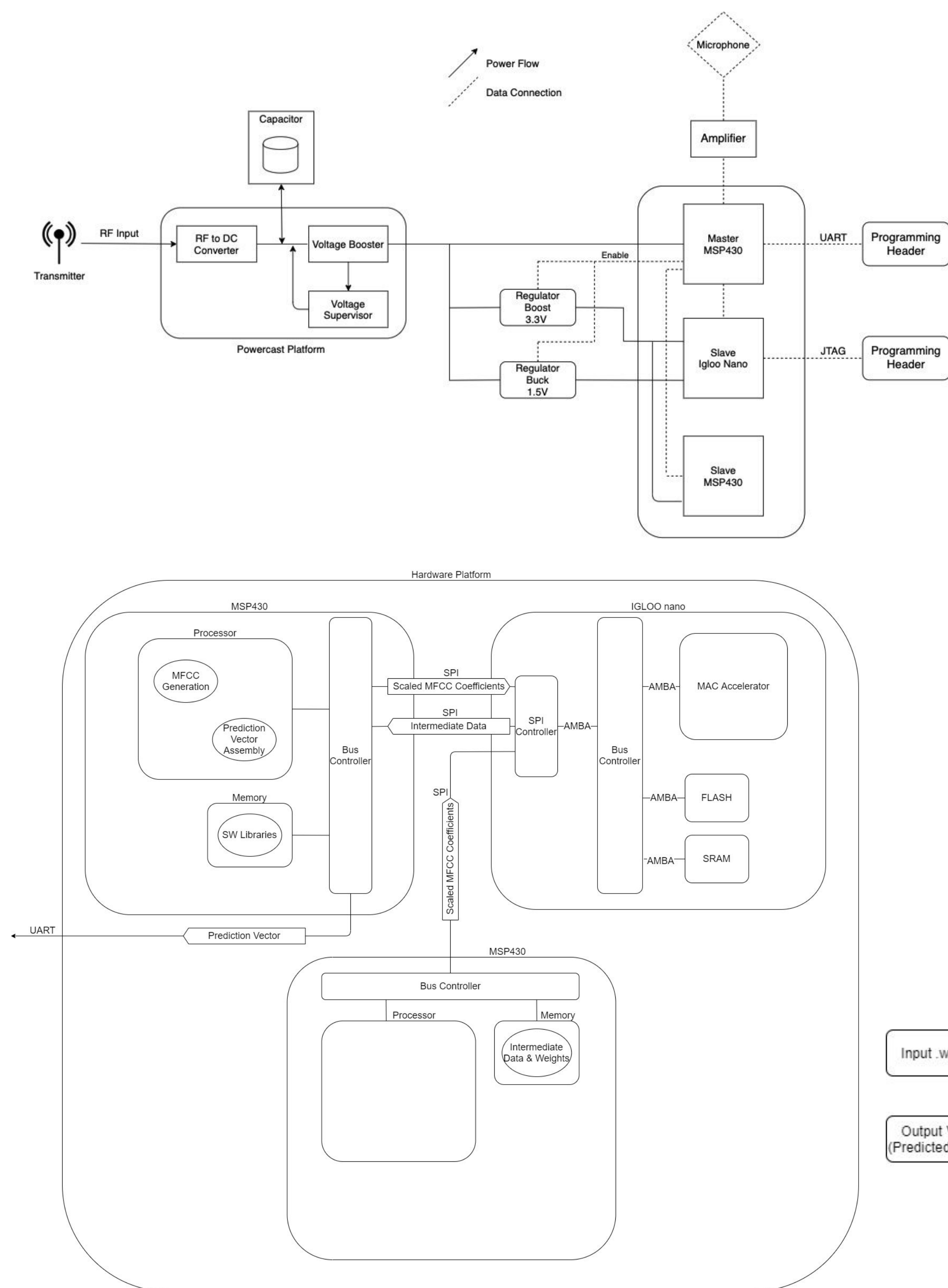
(sdmay20-38)

Henry Duwe

Justin Sung Zixuan Guo Jake Meiss Andrew Vogler Jake Tener

## Introduction

Batteries have short lifespans, unsustainable, and environmentally unfriendly. Thus, the need for an alternative energy source arises. The solution is a self-sustaining system via RF harvesting.



## Functional Requirements

- Batteryless
- Intermittent execution capabilities

## Non-Functional Requirements

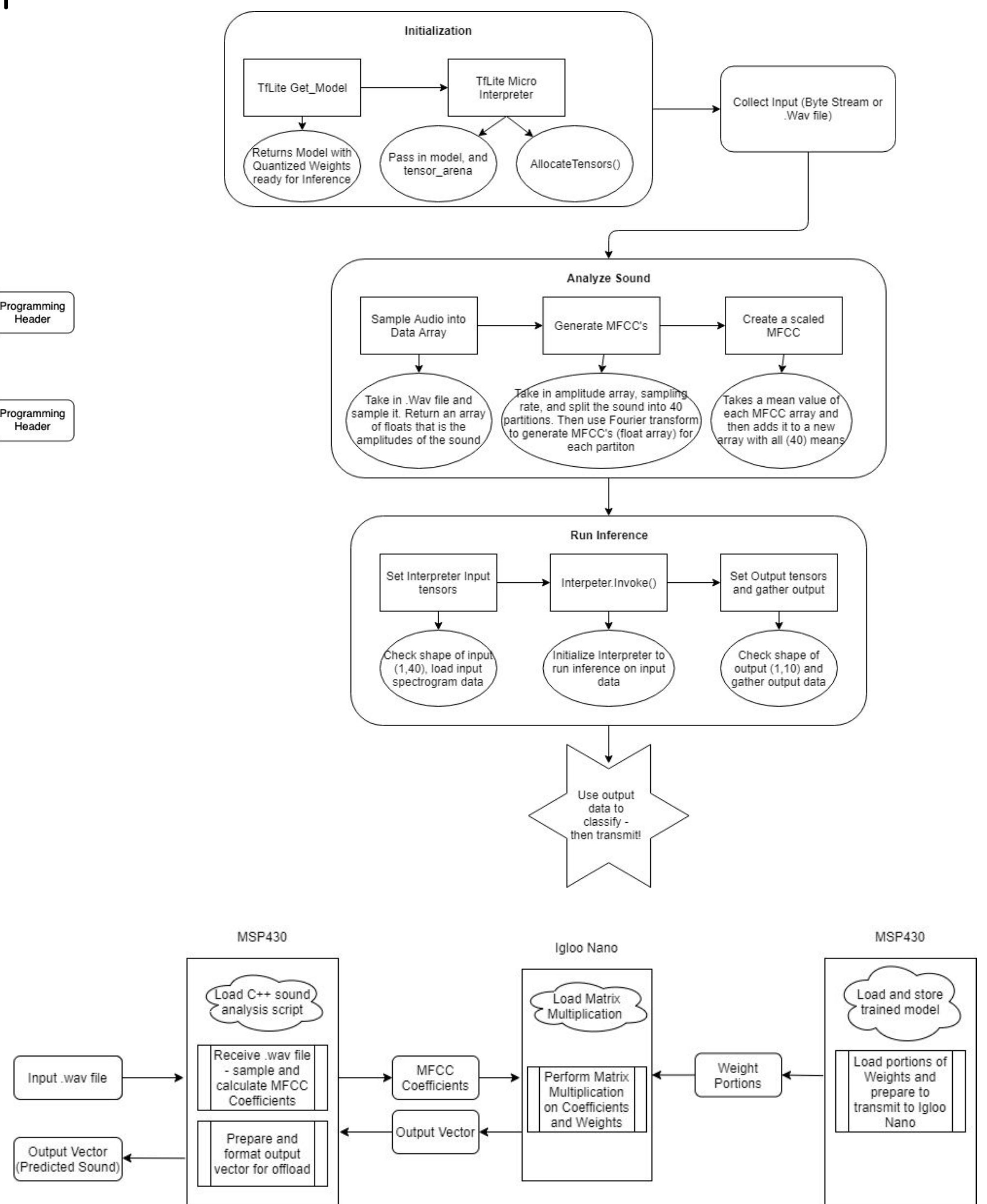
- Low power
- Little to no human intervention

## Users and Usage

Dr. Henry Duwe and his research team  
Prototype platform intended for further research on the topic

## Audio Classification

Executed audio classification on the platform such that given an audio sample, the system would be able to predict what type of sound it was.



## Technology

- Microsemi Igloo Nano
- TI MSP430
- Python
- C++
- Librosa Sound Library
- Aquila Sound Library
- UrbanSound 8k Dataset

## Testing

Integration testing and modular integration was applied to the software and hardware development to minimize errors and error propagation.