

UNIVERSITY OF PLYMOUTH



MAL3018 REPORT COMPUTING
PROJECT
(WaveFyre)

Prepared by:

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Abstract

This report covers the new research of RF (Radio Frequency) filter design optimization method of Contour Optimization with MARL (Multi Agent Reinforcement Learning) and the desktop application development project of 'Wave Fyre'. Wave Fyre is an application that utilizes a new, better performance optimizer in order to enhance the RF Filter design parameters.

This report covers the initial background of first version of this system "VFL Project" and the current limitations, along with how these can be improved through a different approach. Next, legal, social, ethical and professional regulations are discussed with how Wave Fyre keeps on top of these areas. Furthermore, an overview of how Wave Fyre project management approaches and technologies are used in 3 main phases of this project.

The main body discusses the designs, system architecture and development of Wave Fyre, along with an outline and discussion of research, MARL, hardware and software technologies used. Continued with POC (Proof of concept) and software integrate of each week of research and development with the main ideas being discussed in further detail. Performance comparison results and discussions come to next to conclude the research outcome leading to this report.

The final 3 sections conclude this report, all evaluating this project with its achievements, room of improvement, evaluations of the method choices.

Finally find a reference, bibliography list and an appendix, with all related documents to this report are attached.

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