

ELEN4012 - Feature Based Automatic Modulation Classification

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Abstract: automatic modulation classification involves identifying the modulation scheme used in a signal without the decision being guided by an operator. This report covers a preliminary investigation into the design and implementation of such a system. An overview of the relevant literature is presented and proposals are made regarding the details of the implementation of such a system using and Ettus USRP.

Key words: modulation, classification, USRP, UHD

1. INTRODUCTION

2. LITERATURE SURVEY

There are three major recognized approaches to automatic modulation classification, as detailed by [1].

2.1 *Feature Based Automatic Modulation Classification*

Feature based AMR has been shown to be non-ideal, but significantly less computationally intensive[1] than the aforementioned methods.

3. PROJECT COMPONENTS

4. EXISTING SOLUTIONS

5. ALTERNATIVE DESIGNS

6. PROPOSED DESIGN OVERVIEW

6.1 *Development Methodology*

6.2 *Estimated Project Schedule*

6.3 *Estimated Costs*

7. IMPLEMENTATION

7.1 *USRP*

7.2 *UHD API*

7.3 *Build System*

7.4 *Classifier*

8. TESTING

8.1 *Simulated Testing*

8.2 *Practical Testing*

8.3 *CONCLUSION AND RECOMMENDATIONS*

REFERENCES

- [1] Z. Zhu and A. K. Nandi. *Automatic Modulation Classification: Principles, Algorithms and Applications*. John Wiley & Sons, 2015.