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 detailled 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. CONSTRAINTS

4. PROPOSED DESIGN OVERVIEW

5. IMPLEMENTATION

5.1 USRP

5.2 UHD API

5.3 Build System

5.4 Classifier

6. TESTING

6.1 Simulated Testing

6.2 Practical Testing

REFERENCES

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