Contents

[List of figures 2](#_Toc5707087)

[List of Tables 2](#_Toc5707088)

[List of Abbreviations 2](#_Toc5707089)

[List of symbols 2](#_Toc5707090)

[Introduction 2](#_Toc5707091)

[Background 2](#_Toc5707092)

[Related Work 2](#_Toc5707093)

[Methodology 1: Minimizing the Number of Active BBUs to meet user Rate Requirement 3](#_Toc5707094)

[System Layout 3](#_Toc5707095)

[Problem Formulation 3](#_Toc5707096)

[Objective 3](#_Toc5707097)

[Constraints 3](#_Toc5707098)

[Methodology 2: Energy – Efficient RRH to BBU association constraint by processing time and bandwidth 3](#_Toc5707099)

[Methodology 3: Choosing the correct CPU frequency for a given MCS and given RRH-BBU association 3](#_Toc5707100)

[Methodology 4: choosing the optimum MCS for a given RRH to BBU to User association 3](#_Toc5707101)

# List of figures

# List of Tables

# List of Abbreviations

# List of symbols

# Introduction

# Background

# Related Work

# Methodology 1: Minimizing the Number of Active BBUs to meet user Rate Requirement

## System Layout

## Problem Formulation

### Objective

### Constraints

# Methodology 2: Energy – Efficient RRH to BBU association constraint by processing time and bandwidth

# Methodology 3: Choosing the correct CPU frequency for a given MCS and given RRH-BBU association

# Methodology 4: choosing the optimum MCS for a given RRH to BBU to User association