**ON THE PERFORMANCE OF QUICKEST DETECTION SPECTRUM SENSING: THE CASE OF CUMULATIVE SUM**

**Objective:**

The goal is to detect the change in distribution (Quickest change detection (QCD) around the flipping point as quickly as possible. The QCD problem appears in many practical applications, e.g., quality control, power system line outage detection, spectrum reuse, and resource allocation and scheduling.

**Hardware & Software Requirements:**

**Software:** Matlab R2018a.

**Hardware:**

**Operating Systems:**

• Windows 10

• Windows 7 Service Pack 1

• Windows Server 2019

• Windows Server 2016

**Processors:**

Minimum: Any Intel or AMD x86-64 processor

Recommended: Any Intel or AMD x86-64 processor with four logical cores and AVX2 instruction set support

**Disk:**

Minimum: 2.9 GB of HDD space for MATLAB only, 5-8 GB for a typical installation

Recommended: An SSD is recommended a full installation of all Math Works products may take up to 29 GB of disk space

**RAM:**

Minimum: 4 GB

Recommended: 8

**Project Flow:**

Time partitioned into frames (Equal length)

Each Frame:

SPECTRUM SENSING PHASE & DATA TX PHASE

CUSUM Technique

Calculate Pd and Pfa

Receiver operating characteristics

(ROC)curves

CU

**Block diagram of proposed method**