

# Software Requirement: BOM Comparison Tool

## 1. Purpose

The tool will compare a Master Bill of Materials (BOM) with one or more revised BOM files and visually show the differences.

## 2. Input Requirements

- The user must upload a **Master BOM** in **XLSX** format (this is the *source file*).
- The user can then select **1 to 5 target files** to compare against the Master BOM.
- Target files may be in any of the following formats: **CSV, XLSX, DOCX, PDF, TXT**.
- The tool must parse and process all supported formats.

## 3. Comparison Process

- When the user clicks the *Compare* button:
  - The software will read the source and target files.
  - It will compare fields such as MPN, Quantity, Reference Designator (Ref Des), Description, etc.
  - Differences will be detected between the Master BOM and each target file.

## 4. User Interface Requirements

- Show a **side-by-side table view** of the Master BOM and each selected target BOM.
- Highlight differences using **color coding** for easy visual identification.
- Each comparison should be clearly separated and readable.

## 5. Output Requirements

- The user must be able to **save** the comparison result.
- The saved result should be downloadable in **JSON format**.
- The JSON file should contain all comparison details and must be readable later by the user.