Compatibility with Existing Devices and Systems AHP Results

# Engineer 1

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 3.0000 | 3.0000 |
| 0.3333 | 1.0000 | 3.0000 |
| 0.3333 | 0.3333 | 1.0000 |

Weights:  
 [0.58415641 0.28083311 0.13501048]

Max Eigenvalue: 3.1356+0.0000j

Consistency Index (CI): 0.0678+0.0000j

Consistency Ratio (CR): 0.1169+0.0000j

Random Index (RI): 0.5800

# Engineer 2

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 5.0000 | 5.0000 |
| 0.2000 | 1.0000 | 3.0000 |
| 0.2000 | 0.3333 | 1.0000 |

Weights:  
 [0.70071086 0.20211999 0.09716915]

Max Eigenvalue: 3.1356+0.0000j

Consistency Index (CI): 0.0678+0.0000j

Consistency Ratio (CR): 0.1169+0.0000j

Random Index (RI): 0.5800

# Engineer 3

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 3.0000 |
| 1.0000 | 1.0000 | 9.0000 |
| 0.3333 | 0.1111 | 1.0000 |

Weights:  
 [0.37405971 0.53948745 0.08645284]

Max Eigenvalue: 3.1356+0.0000j

Consistency Index (CI): 0.0678+0.0000j

Consistency Ratio (CR): 0.1169+0.0000j

Random Index (RI): 0.5800

# Engineer 4

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 5

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 6

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 7

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 8

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 0.3333 | 0.3333 |
| 3.0003 | 1.0000 | 1.0000 |
| 3.0003 | 1.0000 | 1.0000 |

Weights:  
 [0.1428449 0.42857755 0.42857755]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 9

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 3.0000 |
| 1.0000 | 1.0000 | 5.0000 |
| 0.3333 | 0.2000 | 1.0000 |

Weights:  
 [0.40538755 0.48064009 0.11397237]

Max Eigenvalue: 3.0291+0.0000j

Consistency Index (CI): 0.0145+0.0000j

Consistency Ratio (CR): 0.0251+0.0000j

Random Index (RI): 0.5800

# Engineer 10

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 11

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 3.0000 | 1.0000 |
| 0.3333 | 1.0000 | 3.0000 |
| 1.0000 | 0.3333 | 1.0000 |

Weights:  
 [0.45995809 0.31891713 0.22112479]

Max Eigenvalue: 3.5608+0.0000j

Consistency Index (CI): 0.2804+0.0000j

Consistency Ratio (CR): 0.4835+0.0000j

Random Index (RI): 0.5800

# Engineer 12

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 0.1111 |
| 1.0000 | 9.0009 | 1.0000 |

Weights:  
 [0.28082891 0.13500396 0.58416714]

Max Eigenvalue: 3.5609+0.0000j

Consistency Index (CI): 0.2804+0.0000j

Consistency Ratio (CR): 0.4835+0.0000j

Random Index (RI): 0.5800

# Engineer 13

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 3.0000 | 5.0000 |
| 0.3333 | 1.0000 | 7.0000 |
| 0.2000 | 0.1429 | 1.0000 |

Weights:  
 [0.6017683 0.32363674 0.07459497]

Max Eigenvalue: 3.2332+0.0000j

Consistency Index (CI): 0.1166+0.0000j

Consistency Ratio (CR): 0.2011+0.0000j

Random Index (RI): 0.5800

# Engineer 14

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 15

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 16

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 5.0000 |
| 1.0000 | 1.0000 | 5.0000 |
| 0.2000 | 0.2000 | 1.0000 |

Weights:  
 [0.45454545 0.45454545 0.09090909]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 17

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 3.0000 | 1.0000 |
| 0.3333 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.45995809 0.22112479 0.31891713]

Max Eigenvalue: 3.1356+0.0000j

Consistency Index (CI): 0.0678+0.0000j

Consistency Ratio (CR): 0.1169+0.0000j

Random Index (RI): 0.5800

# Engineer 18

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 19

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 20

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 5.0000 | 5.0000 |
| 0.2000 | 1.0000 | 5.0000 |
| 0.2000 | 0.2000 | 1.0000 |

Weights:  
 [0.68542168 0.23441092 0.08016741]

Max Eigenvalue: 3.2948+0.0000j

Consistency Index (CI): 0.1474+0.0000j

Consistency Ratio (CR): 0.2541+0.0000j

Random Index (RI): 0.5800

# Engineer 21

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 22

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 0.1111 |
| 1.0000 | 9.0009 | 1.0000 |

Weights:  
 [0.28082891 0.13500396 0.58416714]

Max Eigenvalue: 3.5609+0.0000j

Consistency Index (CI): 0.2804+0.0000j

Consistency Ratio (CR): 0.4835+0.0000j

Random Index (RI): 0.5800

# Engineer 23

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 3.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 0.3333 | 1.0000 | 1.0000 |

Weights:  
 [0.45995809 0.31891713 0.22112479]

Max Eigenvalue: 3.1356+0.0000j

Consistency Index (CI): 0.0678+0.0000j

Consistency Ratio (CR): 0.1169+0.0000j

Random Index (RI): 0.5800

# Engineer 24

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 25

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 26

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 3.0000 | 3.0000 |
| 0.3333 | 1.0000 | 3.0000 |
| 0.3333 | 0.3333 | 1.0000 |

Weights:  
 [0.58415641 0.28083311 0.13501048]

Max Eigenvalue: 3.1356+0.0000j

Consistency Index (CI): 0.0678+0.0000j

Consistency Ratio (CR): 0.1169+0.0000j

Random Index (RI): 0.5800

# Engineer 27

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 28

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 29

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 3.0000 | 3.0000 |
| 0.3333 | 1.0000 | 3.0000 |
| 0.3333 | 0.3333 | 1.0000 |

Weights:  
 [0.58415641 0.28083311 0.13501048]

Max Eigenvalue: 3.1356+0.0000j

Consistency Index (CI): 0.0678+0.0000j

Consistency Ratio (CR): 0.1169+0.0000j

Random Index (RI): 0.5800

# Engineer 30

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 3.0000 |
| 1.0000 | 0.3333 | 1.0000 |

Weights:  
 [0.31891713 0.45995809 0.22112479]

Max Eigenvalue: 3.1356+0.0000j

Consistency Index (CI): 0.0678+0.0000j

Consistency Ratio (CR): 0.1169+0.0000j

Random Index (RI): 0.5800

# Engineer 31

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 32

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 0.1111 | 0.1111 |
| 9.0009 | 1.0000 | 0.1111 |
| 9.0009 | 9.0009 | 1.0000 |

Weights:  
 [0.04157954 0.17991623 0.77850422]

Max Eigenvalue: 3.5609+0.0000j

Consistency Index (CI): 0.2804+0.0000j

Consistency Ratio (CR): 0.4835+0.0000j

Random Index (RI): 0.5800

# Engineer 33

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 34

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |
| 1.0000 | 1.0000 | 1.0000 |

Weights:  
 [0.33333333 0.33333333 0.33333333]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Engineer 35

Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 0.3333 | 0.3333 |
| 3.0003 | 1.0000 | 1.0000 |
| 3.0003 | 1.0000 | 1.0000 |

Weights:  
 [0.1428449 0.42857755 0.42857755]

Max Eigenvalue: 3.0000

Consistency Index (CI): 0.0000

Consistency Ratio (CR): 0.0000

Random Index (RI): 0.5800

# Aggregate Results

Aggregate Pairwise Comparison Matrix:

|  |  |  |
| --- | --- | --- |
| 1.0000 | 0.9006 | 1.0246 |
| 1.1103 | 1.0000 | 1.1657 |
| 0.9760 | 0.8579 | 1.0000 |

Aggregate Weights:  
 [0.32389235 0.3625487 0.31355894]

Aggregate Max Eigenvalue: 3.0001+0.0000j

Aggregate Consistency Index (CI): 0.0000+0.0000j

Aggregate Consistency Ratio (CR): 0.0001+0.0000j

Aggregate Random Index (RI): 0.5800