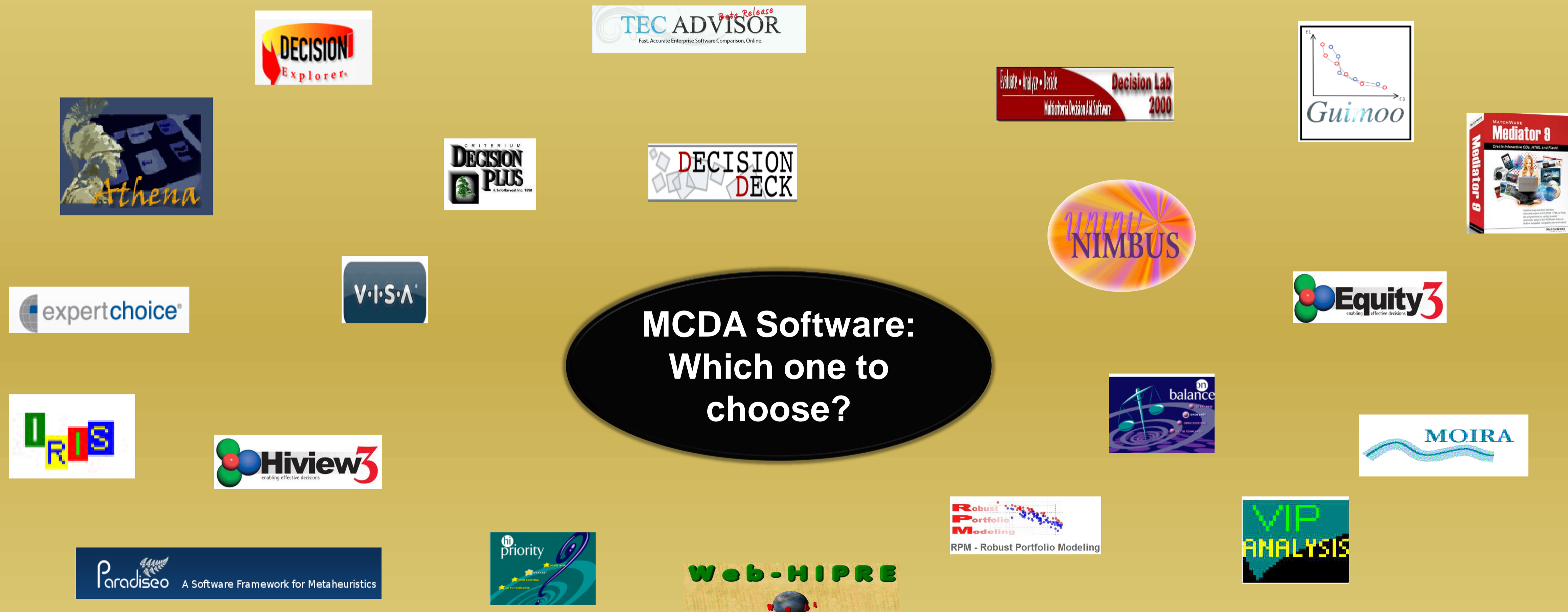


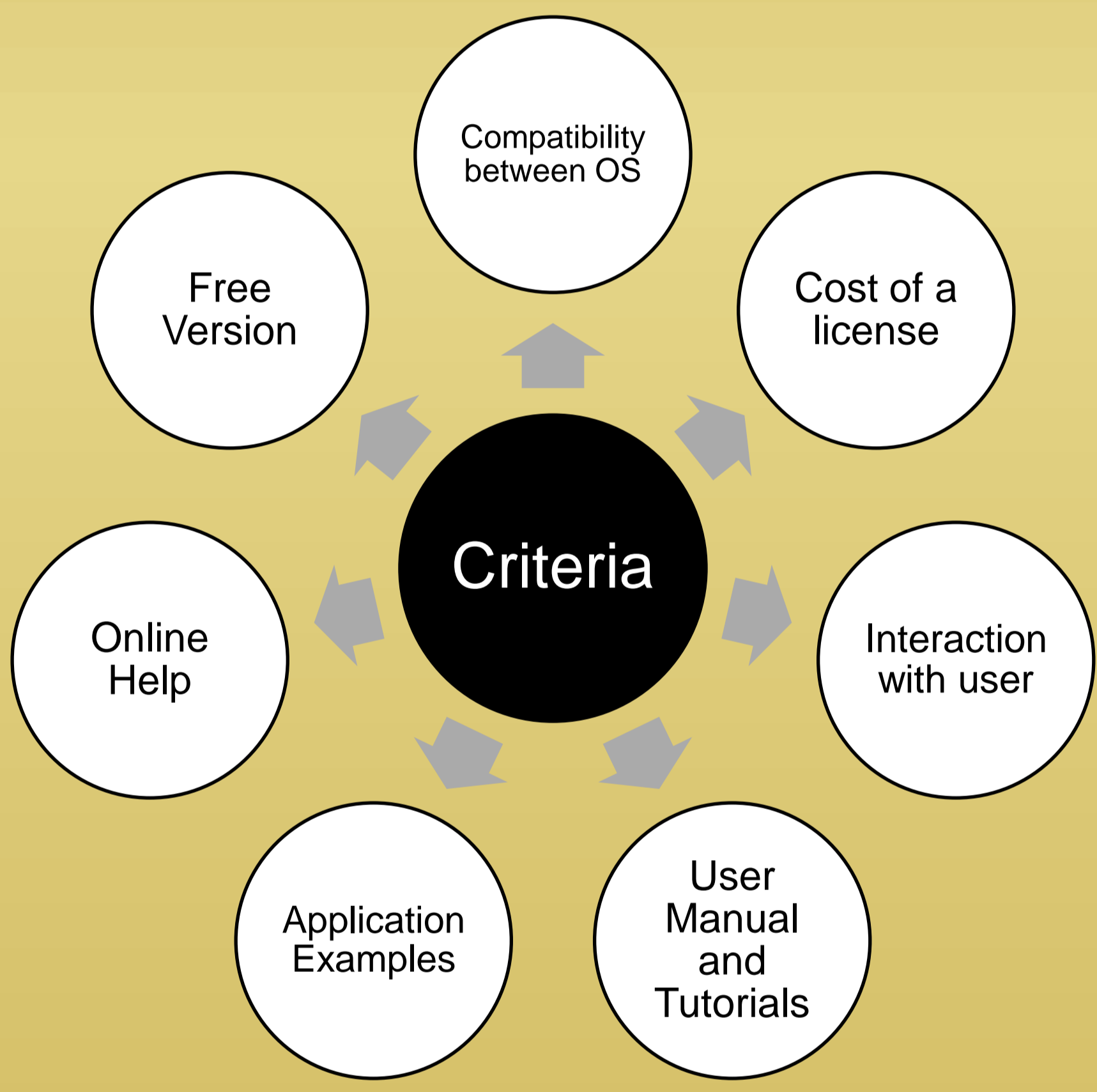


A Multicriteria Decision Aid Software Application for selecting MCDA Software using AHP

University of Minho
School of Engineering
Production and Systems Department



**MCDA Software:
Which one to
choose?**



**Application
Developed**

Pairwise comparison matrix and normalized matrix between alternatives considering the criterion cost of a license

| | S | I | M | S | I | M | Sum of lines | Average |
|------------------|------|-------|-------|------|-------|-------|--------------|---------|
| | 0€ | 1000€ | 1750€ | 0€ | 1000€ | 1750€ | | |
| S: SANEX 0€ | 1 | 7 | 9 | 0.8 | 0.84 | 0.69 | 2.33 | 0.78 |
| I: IRIS 1000€ | 1/7 | 1 | 3 | 0.11 | 0.12 | 0.23 | 0.46 | 0.15 |
| M: MACBETH 1750€ | 1/9 | 1/3 | 1 | 0.09 | 0.04 | 0.08 | 0.21 | 0.07 |
| Σ= | 1.25 | 8.33 | 13 | 1 | 1 | 1 | 3 | 1 |

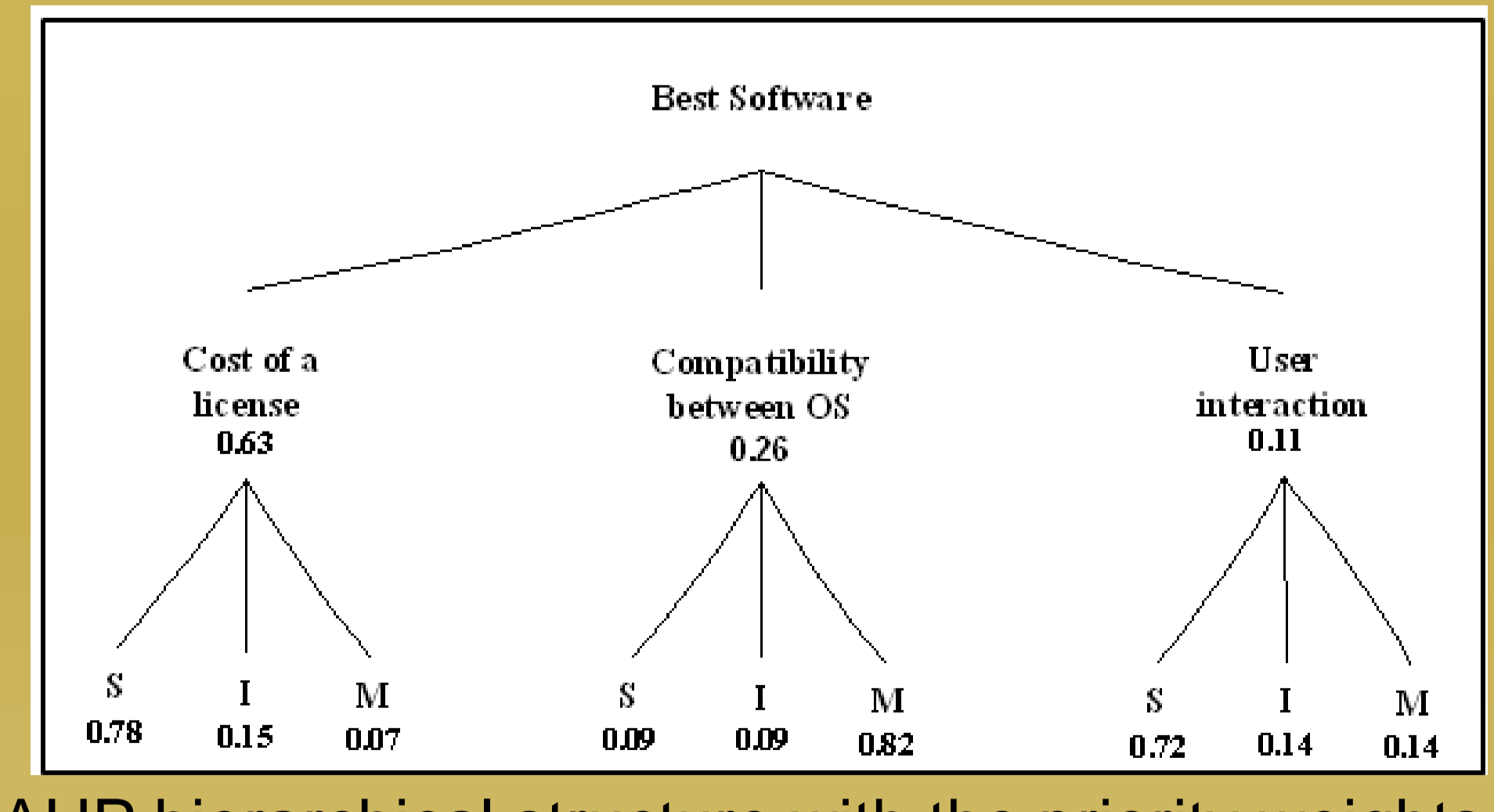
**Example
and
Results**

Saaty's Scale

| Comparison | Preference to be given |
|--|------------------------|
| If x is as important as y | 1 |
| If x is a little more important than y | 3 |
| If x is much more important than y | 5 |
| If x is far more important than y | 7 |
| If x is absolutely more important than y | 9 |

Pairwise comparison matrix between criteria and normalized matrix

| | CL | COS | UI | CL | COS | UI | Sum of lines | Average |
|--|------|------|----|------|------|------|--------------|---------|
| CL: Cost of a license | 1 | 3 | 5 | 0.65 | 0.69 | 0.56 | 1.9 | 0.63 |
| COS: Compatibility between Operating Systems | 1/3 | 1 | 3 | 0.22 | 0.23 | 0.33 | 0.78 | 0.26 |
| UI: User Interaction | 1/5 | 1/3 | 1 | 0.13 | 0.08 | 0.11 | 0.32 | 0.11 |
| Σ= | 1.53 | 4.33 | 9 | 1.00 | 1.00 | 1.00 | 3 | 1.00 |



| | | |
|---------|------|----------------|
| SANEX | 0.59 | 1 ^o |
| IRIS | 0.13 | 3 ^o |
| MACBETH | 0.27 | 2 ^o |

Final priority weights and ranking of the alternatives

AHP hierarchical structure with the priority weights



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