##### Appendix

TABLE XI Distribution of auto-extracted cause-effect links on sections

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Article Title | Section ID | Section Title | Sent Num | CE Num | Sent Covered | Cover Rate (%) |
| f0001(P1): Dimensionality on Summarization | 0 | Abstract | 12 | 0 | 0 | 0.00 |
| 1 | Introduction | 118 | 18 | 21 | 17.80 |
| 2 | Multi-Dimensional Methodology | 36 | 4 | 4 | 11.11 |
| 3 | Basic Characteristics and Principles of Language Use … | 70 | 15 | 24 | 34.29 |
| 4 | General Citation - Definition, Measure and Axiom | 81 | 20 | 22 | 27.16 |
| 5 | Dimension of Representation | 99 | 16 | 17 | 17.17 |
| 6 | Multi-Dimensional Evaluation | 38 | 7 | 8 | 21.05 |
| 7 | Incorporating pictures into summary | 77 | 24 | 24 | 31.17 |
| 8 | Summarizing Videos, Graphs and Pictures | 75 | 20 | 20 | 26.67 |
| 9 | General Summarization | 93 | 18 | 22 | 23.66 |
| 10 | Conclusion | 13 | 2 | 2 | 15.38 |
| ﻿f0002(P2):  Discovery of knowledge flow in science | 0 | Abstract | 5 | 1 | 1 | 20.00 |
| 1 | Introduction | 19 | 0 | 0 | 0.00 |
| 2 | Knowledge Flows through a Citation Network | 11 | 4 | 5 | 45.45 |
| 3 | The Knowledge Flow Spiral—A Knowledge … | 54 | 15 | 21 | 38.89 |
| 4 | Using and Managing Knowledge … | 48 | 14 | 14 | 29.17 |
| 5 | Knowledge Flows through Semantic Link … | 24 | 6 | 6 | 25.00 |
| 6 | Conclusion | 6 | 2 | 1 | 16.67 |
| f0003(P3):  Semantic linking through spaces for cyber-physical-socio intelligence: A methodology | 0 | Abstract | 12 | 3 | 3 | 25.00 |
| 1 | Introduction | 214 | 53 | 51 | 23.83 |
| 2 | CP3SME | 110 | 27 | 28 | 25.45 |
| 3 | The evolving complex space | 66 | 23 | 19 | 28.79 |
| 4 | Interaction pattern and behavior principle in complex … | 44 | 9 | 9 | 20.45 |
| 5 | Symmetry, self-similarity and multi-level semantic … | 37 | 4 | 55 | 13.51 |
| 6 | The mental space | 66 | 17 | 16 | 24.24 |
| 7 | The Semantic Link Network | 141 | 31 | 32 | 22.70 |
| 8 | Linking, interacting and explaining through spaces | 112 | 13 | 15 | 13.39 |
| 9 | Complex link network and socio energy | 91 | 21 | 20 | 21.98 |
| 10 | Closed loops of complex link | 49 | 12 | 14 | 28.57 |
| 11 | The interactive co-computing environment | 57 | 14 | 14 | 24.56 |
| 12 | Philosophical perspective | 88 | 18 | 22 | 25.00 |
| 13 | Summary | 19 | 3 | 4 | 21.05 |
| f0004: Semantics, knowledge and grids | 0 | Abstract | 0 | 0 | 0 | 0.00 |
| 1 | Introduction | 24 | 3 | 3 | 12.50 |
| 2 | Papers in this Issue | 20 | 5 | 5 | 25.00 |
| 3 | Summary | 4 | 1 | 1 | 25.00 |
| f0005: Mapping Big Data into Knowledge Space with Cognitive Cyber-Infrastructure | 0 | Abstract | 12 | 1 | 1 | 8.33 |
| 1 | Introduction | 136 | 20 | 23 | 16.91 |
| 2 | Semantic Link Network -- Weaving Implicit Web on … | 133 | 16 | 15 | 11.28 |
| 3 | Multi-Dimensional Space on Data | 96 | 25 | 24 | 25.00 |
| 4 | Multi-Dimensional Analytics | 69 | 12 | 13 | 18.84 |
| 5 | Unconventional Mapping from Data into Knowledge … | 263 | 55 | 59 | 22.43 |
| 6 | Cognitive Cyber-Infrastructure | 104 | 9 | 10 | 9.62 |
| 7 | Communities of Cognition and Practice | 60 | 8 | 8 | 13.33 |
| 8 | New Paradigm of Science | 59 | 10 | 11 | 18.64 |
| 9 | The Nature of Big Data Computing | 127 | 33 | 28 | 22.05 |
| 10 | Summary | 19 | 4 | 4 | 21.05 |
| f0006: Cyber-Physical Society: The science and engineering for future society | 0 | Abstract | 9 | 2 | 2 | 22.22 |
| 1 | Introduction | 27 | 7 | 7 | 25.93 |
| 2 | Separation | 38 | 6 | 7 | 18.42 |
| 3 | Semantic image and dimension | 28 | 0 | 0 | 0.00 |
| 4 | Super link | 19 | 3 | 3 | 15.79 |
| 5 | Influence | 17 | 1 | 1 | 5.88 |
| 6 | Distinguished characteristics | 38 | 2 | 2 | 5.26 |
| 7 | Scientific issues | 50 | 9 | 12 | 24.00 |
| 8 | Comparison with Internet of Things and Cyber-Physic… | 44 | 7 | 8 | 18.18 |
| 9 | Conclusion | 54 | 11 | 13 | 24.07 |
| f0007: Faceted search, social networking and interactive semantics | 0 | Abstract | 0 | 0 | 0 | 0.00 |
| 1 | Introduction | 28 | 5 | 5 | 17.86 |
| 2 | Scientific issues | 20 | 3 | 3 | 15.00 |
| 3 | Organization of this issue | 26 | 9 | 7 | 26.92 |
| 4 | Summary | 5 | 2 | 2 | 40.00 |
| f0008: Probabilistic Resource Space Model for Managing Resources in Cyber-Physical Society | 0 | Abstract | 9 | 1 | 2 | 22.22 |
| 1 | Introduction | 58 | 13 | 12 | 20.69 |
| 2 | The Resource Space Model RSM | 94 | 20 | 21 | 22.34 |
| 3 | The Probabilistic Resource Space Model P-RSM | 155 | 19 | 18 | 11.61 |
| 4 | Operations Of Probabilistic Resource Space Model | 75 | 11 | 13 | 17.33 |
| 5 | Probabilistic Integrity Constraints | 57 | 5 | 5 | 8.77 |
| 6 | Analysis | 64 | 17 | 20 | 31.25 |
| 7 | Extensions | 107 | 25 | 26 | 24.30 |
| 8 | Application Examples | 69 | 9 | 19 | 13.04 |
| 9 | Conclusion | 12 | 4 | 4 | 33.33 |
| f0009: Basic operations, completeness and dynamicity of cyber physical socio semantic link network CPSocio-SLN | 0 | Abstract | 5 | 2 | 2 | 40.00 |
| 1 | Introduction | 68 | 14 | 15 | 22.06 |
| 2 | Characteristics of Minimum Semantic Cover and Conformation Sequence | 32 | 11 | 12 | 37.50 |
| 3 | Basic Operations and Characteristics of Cpsocio-SLN | 112 | 31 | 34 | 30.36 |
| 4 | Maintenance and Query | 136 | 42 | 51 | 37.50 |
| 5 | An Example on Basic Operations | 15 | 1 | 1 | 6.67 |
| 6 | Summary | 12 | 7 | 6 | 50.00 |
| f0010: Automatically constructing semantic link network on documents | 0 | Abstract | 8 | 1 | 1 | 12.50 |
| 1 | Introduction | 52 | 17 | 18 | 34.62 |
| 2 | Document SLN | 80 | 16 | 18 | 22.50 |
| 3 | Content-Based Semantic Link Discovery | 50 | 12 | 11 | 22.00 |
| 4 | Discovering Semantic Links According To Attribute … | 17 | 4 | 4 | 23.53 |
| 5 | Reasoning | 17 | 4 | 5 | 29.41 |
| 6 | Evolution | 71 | 17 | 16 | 22.53 |
| 7 | Conclusion | 9 | 1 | 1 | 11.11 |
| f0011: Interactive semantics | 0 | Abstract | 18 | 6 | 6 | 33.33 |
| 1 | Introduction | 91 | 15 | 16 | 17.58 |
| 2 | Semantic Worldview | 79 | 9 | 11 | 13.92 |
| 3 | Building and Explaining Semantic Image | 96 | 18 | 18 | 18.75 |
| 4 | Interactive Semantic Base | 51 | 10 | 10 | 19.61 |
| 5 | Interactive Semantics = Interactive System + Semantic … | 62 | 16 | 15 | 24.19 |
| 6 | Semantic Lens | 106 | 24 | 23 | 21.70 |
| 7 | Conclusion | 29 | 5 | 5 | 17.24 |
| f0012: Special section: Semantic Link Network | 0 | Abstract | 0 | 0 | 0 | 0.00 |
| 1 | Introduction | 38 | 3 | 3 | 7.89 |
| f0013: ﻿The schema theory for semantic link network | 0 | Abstract | 7 | 1 | 1 | 14.29 |
| 1 | Introduction | 40 | 8 | 7 | 17.50 |
| 2 | Schema for The Semantic Link Network | 36 | 0 | 0 | 0.00 |
| 3 | SLN Operations | 86 | 4 | 4 | 4.65 |
| 4 | Rule-Constraint Normal Forms for The SLN Schema | 195 | 17 | 19 | 9.74 |
| 5 | Schema Maintenance and Reasoning | 96 | 12 | 14 | 14.58 |
| 6 | Case Study | 95 | 16 | 16 | 16.84 |
| 7 | Discussion | 12 | 1 | 1 | 8.33 |
| 8 | Conclusions | 5 | 1 | 1 | 20.00 |