**A comparison among the main approaches for knowledge representation using an underlying semantic network.**

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| Feature | RDF | RDFS | OWL | RIF Core | RSHP |
| Full Name | Resource Description Framework | Resource Description Framework Scheme | Ontology Web Language | Rule Interchange Format | Relationship |
| First Version | 1.0 (February 2004) | 1.0 (February 2004) | 1.0 (February 2004) | First edition (December 2012) | v1 (January 2004) |
| Last version | 1.1 (February 2014) | 1.1 (February 2014) | 2.0 (December 2012) | Second edition (February 2013) | v14 (January 2015) |
| Designed for | Representation of logical statements | Data modeling vocabulary for RDF data | Formal ontology design | Definition of Horn rules | Representation of relationships between knowledge items |
| Target use | Data exchange of facts, rules and ontologies | Data model | Ontology creation | Rule interchange | Universal knowledge representation and re-use |
| Data model | Directed graph | Directed graph | Directed graph | Object Model | Undirected (property) graph |
| Underlying semantics | RDF formal semantics | RDFS Semantics | OWL 2. Direct Semantics and RDF-based Semantics | RIF Core Semantics | Explicit metamodel |
| Expressivity | Simple RDF triples to represent binary relationthips. | Classes (sub and super classes) and Properties (domain and ranges) | OWL 1.1:   * DL (Description Logic), * Lite, * Full   OWL 2.0:   * EL (Expressions Language) * QL (Query Language) * RL (Rule Language) | * RIF-Core (Core Dialect ) * RIF-BLD (Basic Logic Dialect) * RIF-PRD (Production Rule Dialect) * RIF-FLD (Framework for Logic Dialects) * RIF-OWL 2 RL and RIF RDF * RIF XML | Any kind of relationship.   * N-ary relationships. * Non logic formalism. * Knowledge containers. (reification) |
| Validation | RDF Data Shapes:   * OSLC Resource Shapes, SHACL (Shapes Constraint Language) * SheX (Shape Expressions) * SPIN (SPARQL Inferencing Notation) and SPARQL Rules | Semantic reasoning + see RDF | Semantic reasoning + see RDF | Metamodel conformity | Metamodel conformity |
| Inference | Not at graph level. | Yes but restricted to type inference and super/sub classes and properties | Yes depending on the underlying logic formalism: First Order Logic, F-Logic, DL, etc. | Yes | Not at graph level. |
| Identifiers | URIs (HTTP URIs if Linked Data).  Unique Name Assumption (UNA). | See RDF | See RDF | Internal IDs and UNA. | Internal IDs and UNA. |
| Access protocol | HTTP-based (REST resources) | See RDF | See RDF | See RDF and native APIs | Native API |
| Query language | SPARQL and RDQL | See RDF | SWRL | XPATH (if XML is used as serialization format) | RSHP query language |
| Storage | RDF repository (native RDF repositories, graph-based databases, and wrappers on top of existing relational databases) | See RDF | See RDF | Native API | SQL or NonSQL database |
| Formats (syntax) | RDF/XML, JSON, Turtle, N3, Manchester | See RDF | See RDF | XML | RDF/XML, ISO 25964-“The international standard for thesauri and interoperability with other vocabularies”, etc. |
| Visualization | RDF visualization libraries such as Allegro graph or RDFgravity and other general-purpose graph visualization frameworks Graphviz, Touchgraph, Gephi, Cytoscape, D3.js. | See RDF | See RDF | Native Rule IDEs | RSHP visualization language and the aforementioned general-purpose graph visualization frameworks. |
| Application | Integration of databases, applications and services through a common and shared data model. | See RDF | See RDF | Interchange of business rules and connection with existing ontologies | Semantics-based information retrieval using a natural language interface to support other services such as traceability or quality. |
| Status | W3C recommendation | W3C recommendation | W3C recommendation | W3C recommendation | Industry-oriented |
| Tools | Protégé, SWOOP or Terminae, (ontology editors) | See RDF and RDFS reasoners such as Pellet, Racer or Jess | See RDFS | JRules, Drools or Jess (mainly exporters not importers) | knowledgeMANAGER (a complete suite for knowledge management with RDF import/export capabilities) |