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

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 ($\mathbf{s}$, $\mathbf{p}$, $\mathbf{o}$) 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 (**SVP**). • 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	Yes depending on the underlying logic	Yes	Not at graph level.

		classes and properties	formalism: First Order Logic, F-Logic, DL, etc.		
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)