

Evaluation of the Food and Agriculture Organization of the United Nations (FAO) RDF Data Sets

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Abstract. Evaluation of the Food and Agriculture Organization of the United Nations (FAO) RDF Data Sets

Keywords: RDF Validation, RDF Constraints, DDI-RDF Discovery Vocabulary, Disco, RDF Data Cube Vocabulary, Linked Data, Semantic Web

1 Data Model Consistency

	Constraints										
	DATA-MODEL-CONSISTENCY-01	DATA-MODEL-CONSISTENCY-02	DATA-MODEL-CONSISTENCY-03	DATA-MODEL-CONSISTENCY-04	DATA-MODEL-CONSISTENCY-05	DATA-MODEL-CONSISTENCY-06	DATA-MODEL-CONSISTENCY-07	DATA-MODEL-CONSISTENCY-08	DATA-MODEL-CONSISTENCY-09	DATA-MODEL-CONSISTENCY-10 (!)	DATA-MODEL-CONSISTENCY-11
Data Sets											
http://ecb.270a.info/sparql	✓ (2)	✓ (2)	✓ (2)	✓ (6)	1198352 (50)	✓ (2)	✓ (9)	✓ (2)	✓ (2)	-	6511 (10)

Table 1: Evaluation of <http://ecb.270a.info/sparql>

Data Sets	Constraints										
	DATA-MODEL-CONSISTENCY-01	DATA-MODEL-CONSISTENCY-02	DATA-MODEL-CONSISTENCY-03	DATA-MODEL-CONSISTENCY-04	DATA-MODEL-CONSISTENCY-05	DATA-MODEL-CONSISTENCY-06	DATA-MODEL-CONSISTENCY-07	DATA-MODEL-CONSISTENCY-08	DATA-MODEL-CONSISTENCY-09	DATA-MODEL-CONSISTENCY-10 ⁽ⁱ⁾	DATA-MODEL-CONSISTENCY-11
<i>YC</i>	✓	✓	✓	✗	✗	✓	✗	✓	✓	-	✓
<i>SEC</i>	✓	✓	✓	✗	✗	✓	✗	✓	✓	-	✓
<i>BSI</i>	✓	✓	✓	✗	✗	✓	✗	✓	✓	-	206
<i>IEAQ</i>	✓	✓	✓	✗	✗	✓	✗	✓	✓	-	✗
<i>ICP</i>	✓	✓	✓	✓	✗	✓	✗	✓	✓	-	✓
<i>ICPF</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>STP</i>	✓	✓	✓	✓	✗	✓	✗	✓	✓	-	✓
<i>EXR</i>	✓	✓	✓	✓	✗	✓	✗	✓	✓	-	✓
<i>SAFE</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>ESA</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>IEAF</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	4446
<i>GST</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>MIR</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✗
<i>IVF</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✗
<i>WTS</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✗
<i>BOP</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✗
<i>BSP</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✗

Table 2: Evaluation of <http://ecb.270a.info/sparql>

Data Sets

Data Sets	Constraints										
	DATA-MODEL-CONSISTENCY-01	DATA-MODEL-CONSISTENCY-02	DATA-MODEL-CONSISTENCY-03	DATA-MODEL-CONSISTENCY-04	DATA-MODEL-CONSISTENCY-05	DATA-MODEL-CONSISTENCY-06	DATA-MODEL-CONSISTENCY-07	DATA-MODEL-CONSISTENCY-08	DATA-MODEL-CONSISTENCY-09	DATA-MODEL-CONSISTENCY-10 ^(?)	DATA-MODEL-CONSISTENCY-11
<i>ST3</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✗
<i>BLS</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✗
<i>STS</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>PSS</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>SST</i>	✓	✓	✓	✓	✗	✗	✗	✗	✗	-	✗
<i>CBD</i>	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	✗
<i>RAI</i>	✗	✗	✗	✗	✗	✓	✓	✓	✓	-	✓
<i>RA</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	1859
<i>ESB</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>MFI</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>BKN</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>ST1</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>OFI</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>SPF</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>RTD</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>DD</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
<i>CCP</i>	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓

Table 3: Evaluation of <http://ecb.270a.info/sparql>

Data Sets

Data Sets	Constraints										
	DATA-MODEL-CONSISTENCY-01	DATA-MODEL-CONSISTENCY-02	DATA-MODEL-CONSISTENCY-03	DATA-MODEL-CONSISTENCY-04	DATA-MODEL-CONSISTENCY-05	DATA-MODEL-CONSISTENCY-06	DATA-MODEL-CONSISTENCY-07	DATA-MODEL-CONSISTENCY-08	DATA-MODEL-CONSISTENCY-09	DATA-MODEL-CONSISTENCY-10 (!)	DATA-MODEL-CONSISTENCY-11
TRD	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
FM	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
ILM	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
FVC	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
RDF	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
SEE	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
RIR	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
IRS	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
IFI	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
SSP	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
MMS	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
RPP	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
SSI	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
CISS	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
EON	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
AME	✓	✓	✓	✓	✗	✓	✓	✓	✓	-	✓
RPV	✓	✓	✓	✓	700308	✓	✓	✓	✓	-	✓

Table 4: Evaluation of <http://ecb.270a.info/sparql>

Data Sets

	Constraints										
Data Sets											
	DATA-MODEL-CONSISTENCY-01	DATA-MODEL-CONSISTENCY-02	DATA-MODEL-CONSISTENCY-03	DATA-MODEL-CONSISTENCY-04	DATA-MODEL-CONSISTENCY-05	DATA-MODEL-CONSISTENCY-06	DATA-MODEL-CONSISTENCY-07	DATA-MODEL-CONSISTENCY-08	DATA-MODEL-CONSISTENCY-09	DATA-MODEL-CONSISTENCY-10 (!)	DATA-MODEL-CONSISTENCY-11
<i>KRI</i>	✓	✓	✓	✓	260040	✓	✓	✓	✓	-	✓
<i>LIG</i>	✓	✓	✓	✓	170816	✓	✓	✓	✓	-	✓
<i>DCM</i>	✓	✓	✓	✓	54180	✓	✓	✓	✓	-	✓
<i>JVC</i>	✓	✓	✓	✓	13008	✓	✓	✓	✓	-	✓

Table 5: Evaluation of <http://ecb.270a.info/sparql>

Data Sets

2 Existential Quantifications

Data Sets	Constraints			
	<i>EXISTENTIAL-QUANTIFICATIONS-01</i>			
	<i>EXISTENTIAL-QUANTIFICATIONS-02</i>			
	<i>EXISTENTIAL-QUANTIFICATIONS-03</i>			
	<i>EXISTENTIAL-QUANTIFICATIONS-04</i>			
<i>http://ecb.270a.info/sparql</i>	9	✓	✓	✓

Table 6: Evaluation of *http://ecb.270a.info/sparql*

3 Cardinality Restrictions

Data Sets	Constraints			
http://ecb.270a.info/sparql	<i>MINIMUM-QUALIFIED-CARDINALITY-RESTRICTIONS-02</i>	<i>MAXIMUM-QUALIFIED-CARDINALITY-RESTRICTIONS-01</i>	<i>EXACT-UNQUALIFIED-CARDINALITY-RESTRICTIONS-01</i>	<i>EXACT-QUALIFIED-CARDINALITY-RESTRICTIONS-02</i>
			X	✓
			✓	✓
			✓	✓

Table 7: Evaluation of <http://ecb.270a.info/sparql>

Data Sets	Constraints
	MAXIMUM-QUALIFIED-CARDINALITY-RESTRICTIONS-01
<i>YC</i>	✓
<i>SEC</i>	✓
<i>BSI</i>	✓
<i>IEAQ</i>	✓
<i>ICP</i>	✓
<i>ICPF</i>	✓
<i>STP</i>	✓
<i>EXR</i>	✓
<i>SAFE</i>	✓
<i>ESA</i>	✓
<i>IEAF</i>	✓
<i>GST</i>	✓
<i>MIR</i>	✓
<i>IVF</i>	✓
<i>WTS</i>	✓
<i>BOP</i>	✓
<i>BSP</i>	✓

Table 8: Evaluation of <http://ecb.270a.info/sparql>

Data Sets

	Constraints
	MAXIMUM-QUALIFIED-CARDINALITY-RESTRICTIONS-01
Data Sets	
<i>ST3</i>	✓
<i>BLS</i>	✓
<i>STS</i>	✓
<i>PSS</i>	✓
<i>SST</i>	✓
<i>CBD</i>	✓
<i>RAI</i>	✓
<i>RA</i>	✓
<i>ESB</i>	✓
<i>MFI</i>	✓
<i>BKN</i>	✓
<i>ST1</i>	✓
<i>OFI</i>	✓
<i>SPF</i>	✓
<i>RTD</i>	✓
<i>DD</i>	✓
<i>CCP</i>	✓

Table 9: Evaluation of *http://ecb.270a.info/sparql*

Data Sets

	Constraints
	MAXIMUM-QUALIFIED-CARDINALITY-RESTRICTIONS-01
Data Sets	
<i>TRD</i>	✓
<i>FM</i>	✓
<i>ILM</i>	✓
<i>FVC</i>	✓
<i>RDF</i>	✓
<i>SEE</i>	✓
<i>RIR</i>	✓
<i>IRS</i>	✓
<i>IFI</i>	✓
<i>SSP</i>	✓
<i>MMS</i>	✓
<i>RPP</i>	✓
<i>SSI</i>	✓
<i>CISS</i>	✓
<i>EON</i>	✓
<i>AME</i>	✓
<i>RPV</i>	✓

Table 10: Evaluation of *http://ecb.270a.info/sparql*

Data Sets

Constraints	
Data Sets	MAXIMUM-QUALIFIED-CARDINALITY-RESTRICTIONS-01
	<i>KRI</i>
	<i>LIG</i>
	<i>DCM</i>
	<i>JVC</i>

Table 11: Evaluation of *http://ecb.270a.info/sparql*

Data Sets

4 Structure

Data Sets	Constraints	
	<i>STRUCTURE-01</i>	<i>STRUCTURE-02</i>
<i>http://ecb.270a.info/sparql</i>	✓	✓

Table 12: Evaluation of *http://ecb.270a.info/sparql*

5 Further Constraints