Engaging Content
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Explaining Disclosure Decisions Over Personal Data

Roghaiyeh (Ramisa) Gachpaz Hamed, Harshvardhan J. Pandit, Declan O'Sullivan, Owen Conlan
ADAPT Centre, Trinity College Dublin, Ireland

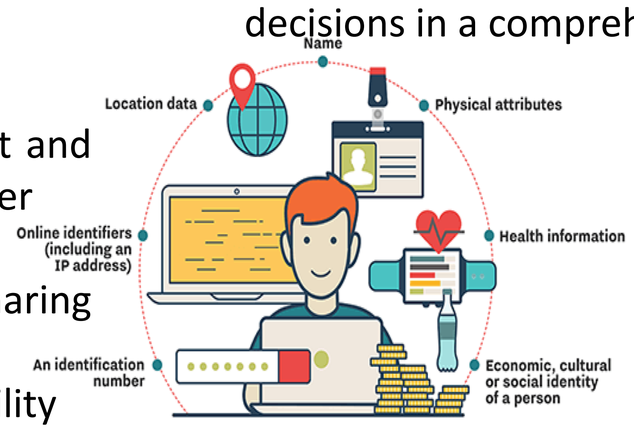
{ramisa.hamed,harshvardhan.pandit,declan.osullivan,owen.conlan}@adaptcentre.ie

Problem statement:

Lack of individual understanding on how and why automatic disclosure decisions are made over personal data

Motivation

- Using technology to automate the data request and sharing mechanism in a privacy conscious manner
- People have right over their data
- Improve data owner confidence and trust on sharing personal data
- Increase scrutability and information accountability

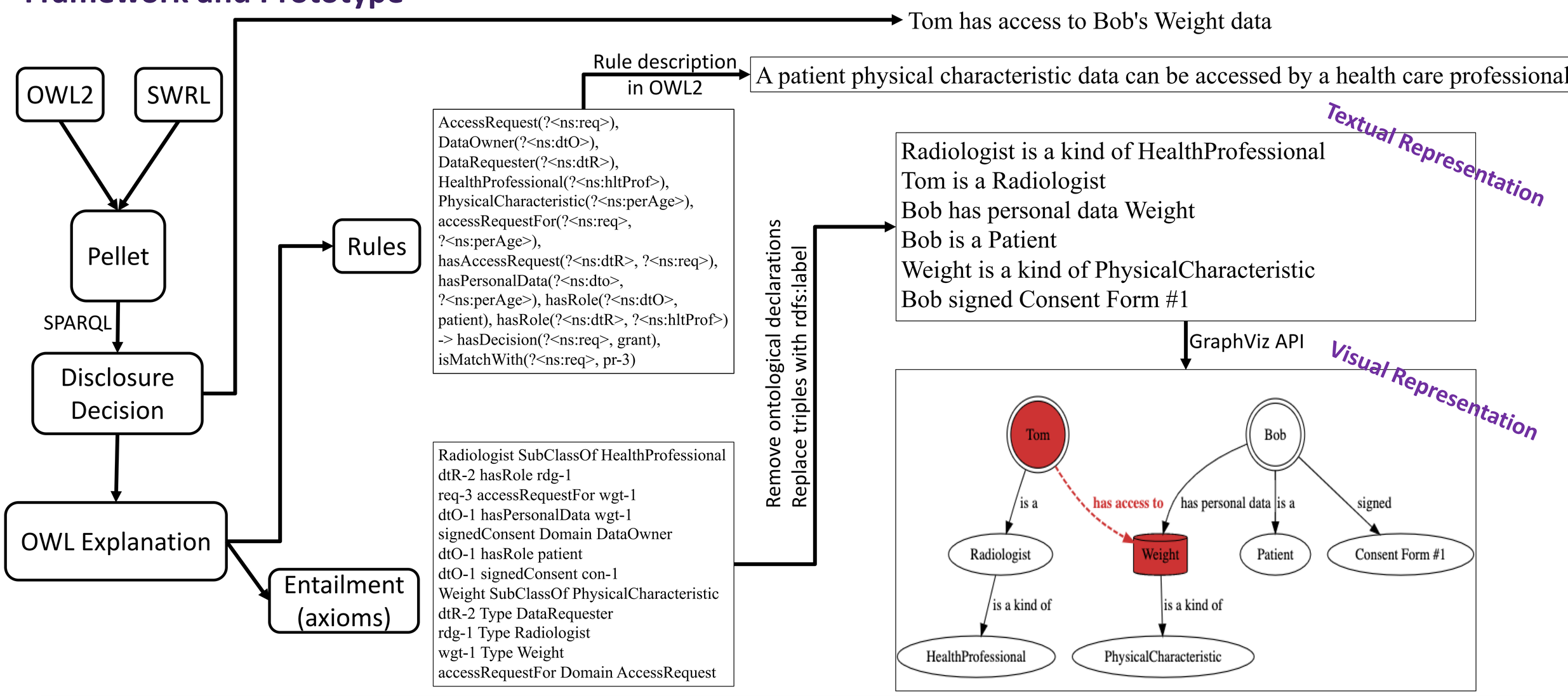


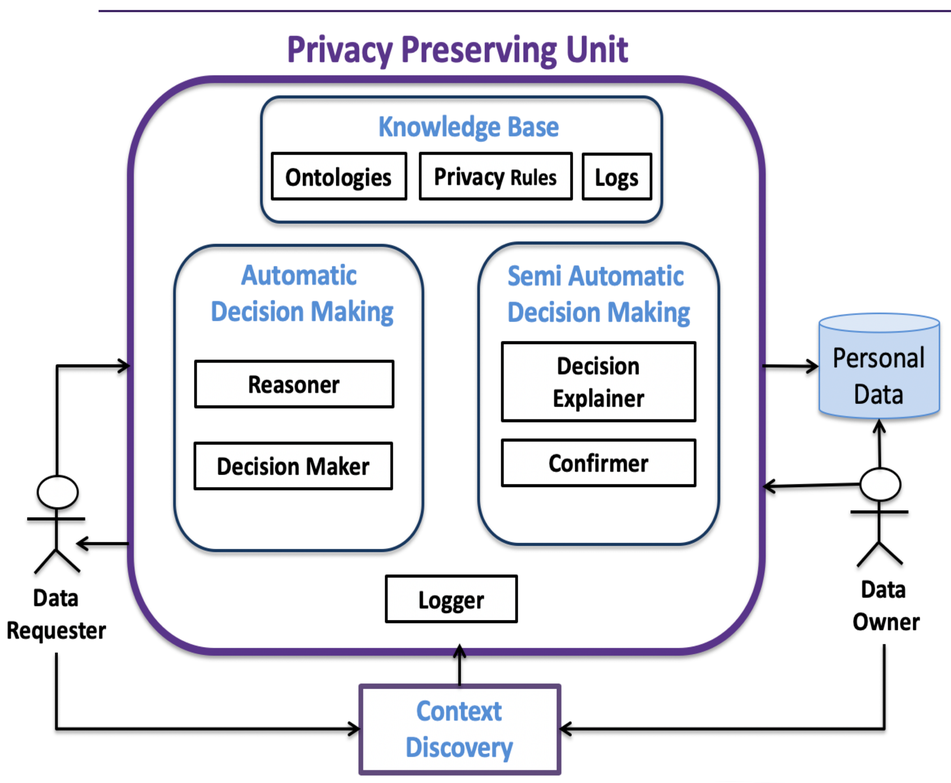
Technical Approach:

Utilising semantic web technologies to explain complex disclosure decisions in a comprehensible manner

- Domain knowledge → OWL2
- Data disclosure rules → SWRL
- Data request → Apache Jena API
- Reasoning → Pellet reasoner
- Retrieved data → SPARQL
- Explanation → OWL Explanation API
- Representation → Textual & visual

Framework and Prototype





User-Study

- Two scenarios in health domain
- 20 online participants

Results

		SUS (Scores 0 - 100, Higher better)		Comprehension (Scores 0 - 3, Higher better)		ASQ (Scores 1 - 7, Lower better)	
		Mean	SD	Mean	SD	Mean	SD
S1	Textual	77.25	23.44	2.43	0.49	2.53	1.19
	Visual	72.75	15.61	2.23	0.78	2.17	0.97
S2	Textual	71.5	10.55	1.93	0.8	2.67	1.2
	Visual	74.25	17.25	1.98	0.98	2.2	0.61

Conclusion and Future work

- Good usability (SUS) and acceptable satisfaction(ASQ)
- Sufficient understanding (Comprehension) of the explanations
- Similar results for textual and visual representation
- Undertake further user-studies involving greater number of participants and complex scenarios

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