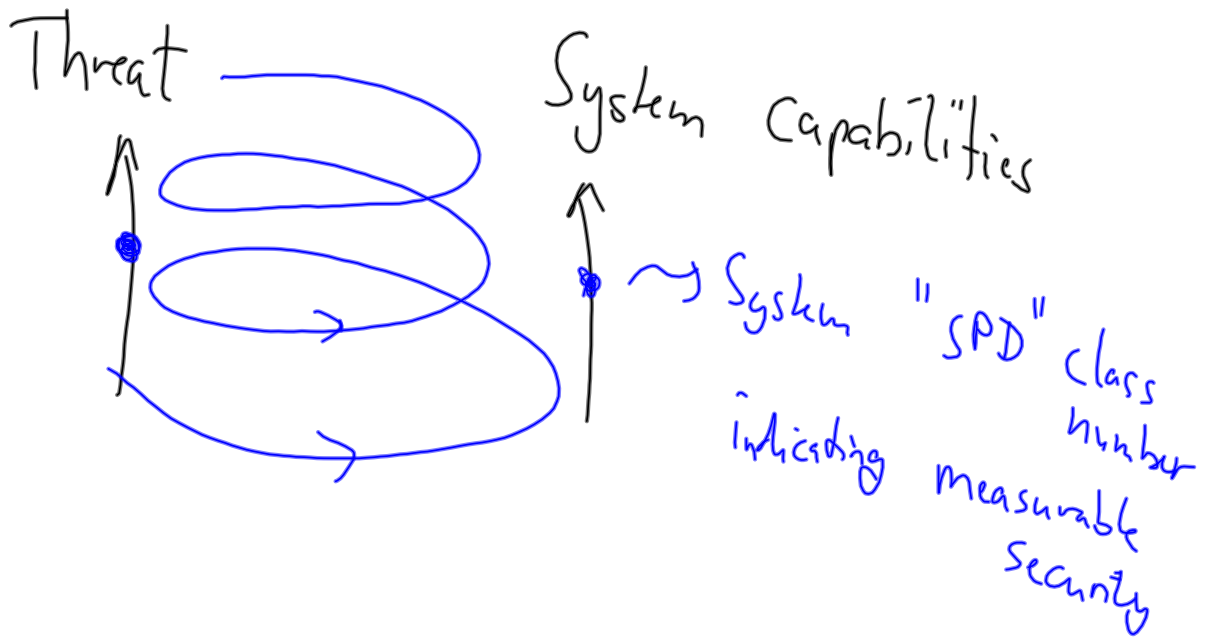


Today

- Express verbally our desired goal
Example: overview over courses which a student has
- implementation in SWRL
- Discussion on "rules" and limitations
- Further: more complex business rules
Example: % of usage of advanced class rooms

Composable Security



Running SWRL rules on y... PSHIELD-public - pSHIELD x File:PSHIELD-arch.png - p x

pshield.unik.no/wiki/File:PSHIELD-arch.png

Vil du at Google Chrome skal lagre passordet? Lagre passord Aldri for dette nettstedet

File:PSHIELD-arch.png

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SPD Overlay

Enhanced embedded SPD services

SPD Middleware Layer

Enhanced embedded SPD network features

SPD Network Layer

Enhanced embedded SPD node features

SPD Node Layer

Stand Alone ES

Connected ES

Semantics

System of Systems

Future Systems Middleware Services

Network

Sensor

Security, Privacy, Dependability

Measurable Security

No higher resolution available.
PSHIELD-arch.png (648 × 437 pixels, file size: 76 KB, MIME type: image/png)

File history

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	Date/Time	Thumbnail	Dimensions	User	Comment
delete all	current		648×437 (76 KB)	JosefNoll (Talk contribs block)	

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 Edit this file using an external application (See the [setup instructions](#) for more information)

File:NSHIELD-process.png

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File File history File links

File:NSHIELD-process.png

from pSHIELD key concepts to nSHIELD outcomes

The diagram illustrates the process flow from pSHIELD key concepts to nSHIELD outcomes. It is divided into three main sections: **Overlay**, **Policy-based**, and **Core Services**.
 - **Overlay**: Contains an **Intelligence Overlay** component.
 - **Policy-based**: Contains a **Policy** component.
 - **Core Services**: Includes **Composition** and **Discovery** processes, leading to a **System** (circled in red), which consists of **Middleware**, **Network**, and **Sensors, Embedded Systems**.
 - **Semantic Technologies**: At the bottom, it provides **OWL Metrics (XML)** and **OWL Description (XML)**.
 - **Desired SPD** (Security Policy Description) is shown as an input to the Intelligence Overlay.
 - **Overlay "Embedded Intelligence"** is the output of the Intelligence Overlay.
 - **Security** (handwritten note) is associated with the Intelligence Overlay.
 - **Class 4 Sec.** (handwritten note) is associated with the Policy component.
 - **OWL Metrics (XML)** (circled in red) is shown as an output from the Core Services section.

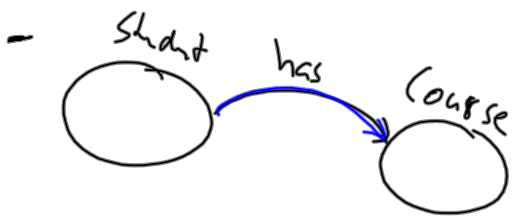
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 NSHIELD-process.png (705 × 434 pixels, file size: 59 KB, MIME type: image/png)

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Click on a date/time to view the file as it appeared at that time.

	Date/Time	Thumbnail	Dimensions	User	Comment
current	11:30, 8 March 2013		705×434 (59 KB)	Josef.Noll (Talk contribs)	

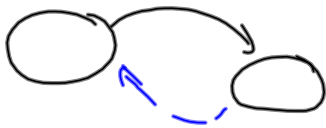
lessons learned from "first exercise on rules in ontologies"



Student(?s) \wedge Course(?c) \rightarrow Study(?s, ?c)

Properties in ontology

"functional, symmetric, transitive, ..."



"internal" properties

\hookrightarrow implications

*1 Help

SWRL Query = SQWRL

\wedge SQWRL: select(?s, ?c)

Protege 3.x vs 4.x Martin

SWRL in Protege 4.x
↳ external reasoner Philip

Properties & "internal reasoning" in Protege
Jose

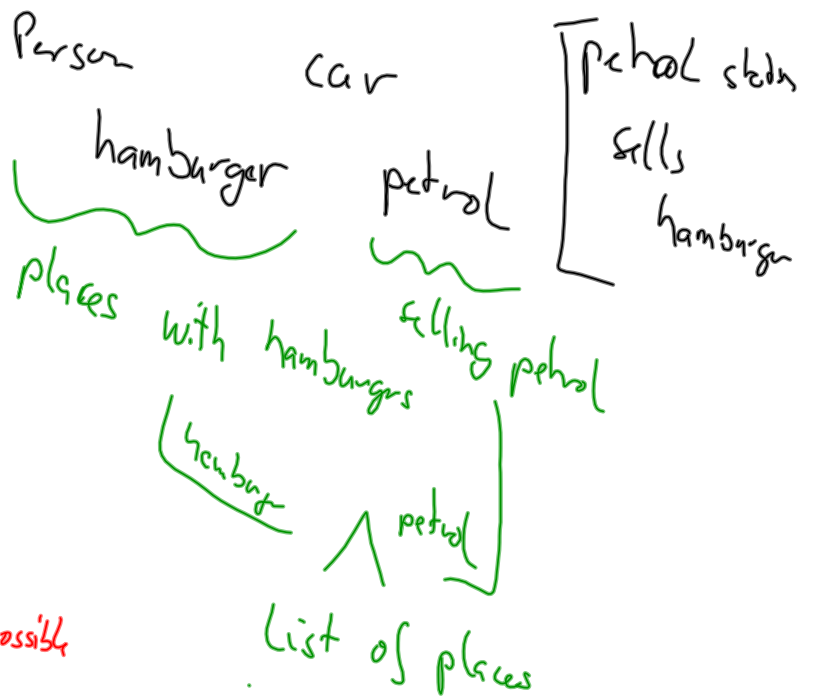
[[File: ~~Local Presence~~.owl]]

"or"
v

Rule 3:



~~and~~ and not possible



limitations of ontologies & rules

SWRL: no "or"

KISS

Keep it simple, stupid

↳ make 2 rules

Ontology: meat

Owl is

Open world assumption → Everything which is not forbidden is allowed

Close world assumption

allowed to drive a car?

↳ nobody

valid driver license → drive a car

→ Only things which are explicitly allowed are allowed (everything is forbidden by default)

In security

⇒ open to everybody, except

x, y, z ✓

closed for everybody, open for holder of an id-card ✗

Ali, Jim, ...

new person (Bob)