ODRL SERVICE LICENSING PROFILE (ODRL-S)

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Service Oriented Computing

Software
- perceived as a product, requiring possession and ownership.

Software-as-a-service
- a mechanism of renting software where users are subscribed to the software they use.
Service Oriented Computing (SOC)

- Allows the software-as-a-service concept to expand allowing applications to be constructed on the fly.

- Allows services to be reused everywhere and by anybody.
Service Oriented Computing

- Services are...
  - Software fragments representing a business functionality that can be composed with other services.

- A service consists
  - `interface` part defining functionality visible to the external world.
  - `implementation` part realizing the interface.
# Service Oriented Computing

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Software</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature</td>
<td>Stand-alone</td>
<td>Distributed</td>
</tr>
<tr>
<td>Accessibility</td>
<td>Guaranteed</td>
<td>Network dependent</td>
</tr>
<tr>
<td>Reuse Level</td>
<td>Very low</td>
<td>Excellent</td>
</tr>
<tr>
<td>Composition</td>
<td>Discouraged</td>
<td>Fundamental</td>
</tr>
<tr>
<td>Data Separability</td>
<td>Possible</td>
<td>Inseparable</td>
</tr>
<tr>
<td>Consumer’s Ownership</td>
<td>Individual</td>
<td>No ownership</td>
</tr>
</tbody>
</table>
Service License

- Describes the use of and access to services.
- A Complementary Concept for the Completeness of service description.
- To enable a broader usage of service that balances rights of the owner and the consumer.
- No negotiations between the licensor and the licensees.
Service License: An Example (from Amazon)

[1.A.1] You may write an Application that interfaces with Amazon Web Services.

[1.A.4] You may not interfere or attempt to interfere in any manner with the functionality or proper working of Amazon Web Services.

[1.B.1] You may display the Amazon Properties in any format you choose, subject to the terms and conditions contained in this Agreement.

[1.B.6] You may not store any Amazon Properties in any database, or network of servers, or other repository, either with or without a central location, which enables others to share the Amazon Properties without our prior written consent.
Today’s Service Descriptions

- WSDL is the standard way to describe what a service does.
- Researches continue on languages to enhance and to complete the description provided by WSDL...
  - WSLA (Web Service Level Agreement)
  - SLAng (SLA notation generator)
  - WSOL (Web Service Offerings Language)
  - WS-Policy
  - WSPL (Web Services Policy Language)
  - ebXML CPP/CPA
Scenario of Service Licensing

Map Service

Intermediate Table Reservation Service

Restaurant Service
Expressing a Service License

- Licensing clauses are unexplored by the currently available service description standards and languages.

- Instead of proposing a new language for describing the licensing services, we could draft using existing rights expression languages such as XrML, ODRL etc.,
Intentions to Select ODRL for Services

- ODRL is an open standard language, for expressing rights information in XML.
- Being published in the W3C, ODRL has a wide acceptance.
- ODRL is supported by several industries and consortia.
- ODRL is focused on rights expression, thus could incorporate the specific licensing clauses related to services.
ODRL-S: Describing License Clauses

- Subject
- Scope of Rights
- Financial Terms
- Warranties, Indemnities, Limitation of Liabilities
- Evolution

ODRL Asset Model
Extended ODRL Rights Model
Representation of SLA in ODRL
Representation of Service Evolution in ODRL
ODRL-S Subject

- relates to the definition of the service being licensed.
- includes
  - a unique identification code for the service,
  - service name,
  - service location, and
  - other relevant information.
- directly adopt the **ODRL Asset Model**.
ODRL-S Scope of Rights

- **Adaptation**

  A service $S$ is reproduced as an other independent service $S'$ if $O(S') \neq O(S)$ and $S$ and $S'$ are independent in execution.

- **Composition**

  A service $S$ is composite if its operations depend on operations belonging to $n$ other services $O(S) \supset \{o_f : o_f \in O(S_i), i = [1,..,n]\}$.

- **Derivation**

  A service $S'$ is said to be derived from $S$ if $O(S') \supseteq O(S)$ on satisfying
  (i) To exist $S'$, $S$ should be a Free/Open Service and
  (ii) $S$ and $S'$ are independent in execution.
ODRL-S Scope of Rights

- Attribution
  - Ascribing a service to the entity responsible for its creator (using the semantics of ODRL).

- Sharealike
  - A service could expect the service being composed or derived to reflect the same terms and conditions of itself (using the semantics of ODRL-CC profile).

- Non-commercial Use
  - Denying the use for commercial purposes (using the semantics of ODRL-CC profile).
ODRL-S Scope of Rights
ODRL-S Financial Terms

- A service license leverages the way of making revenue opportunities and generating new markets.
- We adopt ODRL payment model for services to represent the Financial Terms model in ODRL-S.
ODRL-S Financial Terms

- requirement
- fee
- prepay
- postpay
- peruse
- payment
Warranty

Describe functional and non-functional properties of services, provided as a way of attracting consumers (similar to WSLA and SLAng terms).

Indemnity

A way of defense by the licensor for the licensee if a third party sues the licensee for IPR violations.

Limitation of liability

Restrict the liability of each of the parties under the license agreement.
ODRL-S WIL (Warranty)
ODRL-S WIL (Indemnity)

requirement

indemnity

third party infringement claims
ODRL-S WIL (Limitation of liability)
**ODRL-S Evolution**

- A service can evolve in the following ways:
  - Modifications by the provider in functional and/or non-functional properties of the service, represented by new releases or new versions.
  - Termination of the current running service and substitution by a new service with different behavior.
  - Switching to a different service license.
ODRL-S Evolution

permission → evolution

- maxupgrades
- maxversions
- substitutable
- generic
Conclusions

- A way of expression of licensing clauses for services
- Developed a new profile for ODRL describing service licensing clauses (including SLA terms)
The ODRL initiative announces the ODRL-S Working Group to develop a standard for representing service licensing.
We welcome you to participate in discussions of WG to make ODRL-S as a complete profile for service licensing.
Please email your comments, questions, and feedback on ODRL Service Licensing Profile to odrl-s@dit.unitn.it
Thank You!