CC/PP and UAProf: Issues, improvements and future directions

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DELI: Delivery Context Library

HTTP Request → Profile Resolution (DELI) → Resolved Profile → Content

Content specialisation e.g. transformation
alternate selection transcoding (Apache Cocoon)

Specialised content
Profile resolution in CC/PP and UAProf

HTTP Request

CC/PP information

Profile Reference

Profile Diff
SoundCapable: No

Profile Diff
Language: Fr

Profile Repository

Reference Profile
SoundCapable: Yes
Language: En

Profile Resolution

Vocabulary Definition
SoundCapable
Type: Boolean
Resolution: Override
....
<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:prf="http://www.mydevice.com/vocab/version#">
  <rdf:Description rdf:ID="MyDeviceProfile">
    <prf:component>
      <rdf:Description rdf:ID="HardwarePlatform">
        <prf:SoundCapable>No</prf:SoundCapable>
      </rdf:Description>
    </prf:component>
  </rdf:Description>
</rdf:RDF>
Problems with resolution rules based on order

- UAProf resolution rules are based on order
- Statements in RDF models are unordered
- This is in contrast to XML where there is document order for elements
The XML serialisation of RDF specifies the same model in many different ways

- We cannot use existing XML tools with CC/PP
- We need RDF rather than XML parsers
- We cannot query profiles using XSLT
RDF and RDF schema is not always used correctly

<?xml version="1.0" ?>
<rdf:RDF xmlns:rdf="http://www.w3.org/TR/1999/02/22-rdf-syntax-ns#"
    xmlns:rdfs="http://www.w3.org/1999/PR-rdf-schema-19990303#"
    xmlns:prf="http://www.wapforum.org/UAPROF/ccppschema-20010330#">
    <rdf:Description ID="Component">
        <rdf:type resource="http://www.w3.org/TR/PR-rdf-schema#Class" />
        <rdfs:subClassOf rdf:resource="http://www.w3.org/TR/1999/PR-rdf-schema-19990303#Resource" />
        <rdfs:label>Component</rdfs:label>
    </rdf:Description>

    <rdf:Description ID="WmlScriptVersion">
        <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
        <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Bag"/>
        <rdfs:domain rdf:resource="#WapCharacteristics"/>
        <rdfs:comment>
            Description: List of WMLScript versions supported by the device. Property value is a list of version numbers, where each item in the list is a version string conforming to Version. List items are separated by white space.
            Type: Literal
            Resolution: Append
            Examples: "1.1", "1.0"
        </rdfs:comment>
    </rdf:Description>
</rdf:RDF>
Profile Structure

- The mapping of profile attributes on to constraints is implicit
- Simple attributes and complex attributes are joined by ANDs whereas the values in complex attributes are joined by ORs e.g. *Only return resources that are written in French and that do not require sound and that have MIME type image/jpeg or text/html*
- Ideally we should be able to use ORs of ANDs e.g. *Only return resources that have MIME type text/html or image/jpeg where resolution is below 320x240*
- This should be theoretically possible but processors make assumptions about the structure of the profile
Vocabularies

- RDF has not yet proposed ways of dealing with multiple vocabularies
- How do we deal with different versions of the same vocabulary?
- UAProf has two versions of the same vocabulary that contain identical and slightly different variants
- How do we deal with different vocabularies which describe similar aspects of devices?
Summary

• CC/PP, UAProf and RDF
  – UAProf profile resolution is awkward for an RDF model
  – The XML serialisation of RDF is over-complicated
  – RDF and RDF schema is not always used correctly

• Theoretical Issues
  – We need a more flexible approach to profile structure
  – We need to be able to deal with different vocabularies

• Check out my website
  – http://www-uk.hpl.hp.com/people/marbut