



Delivery Context Workshop

---

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

Mark H. Butler, PhD

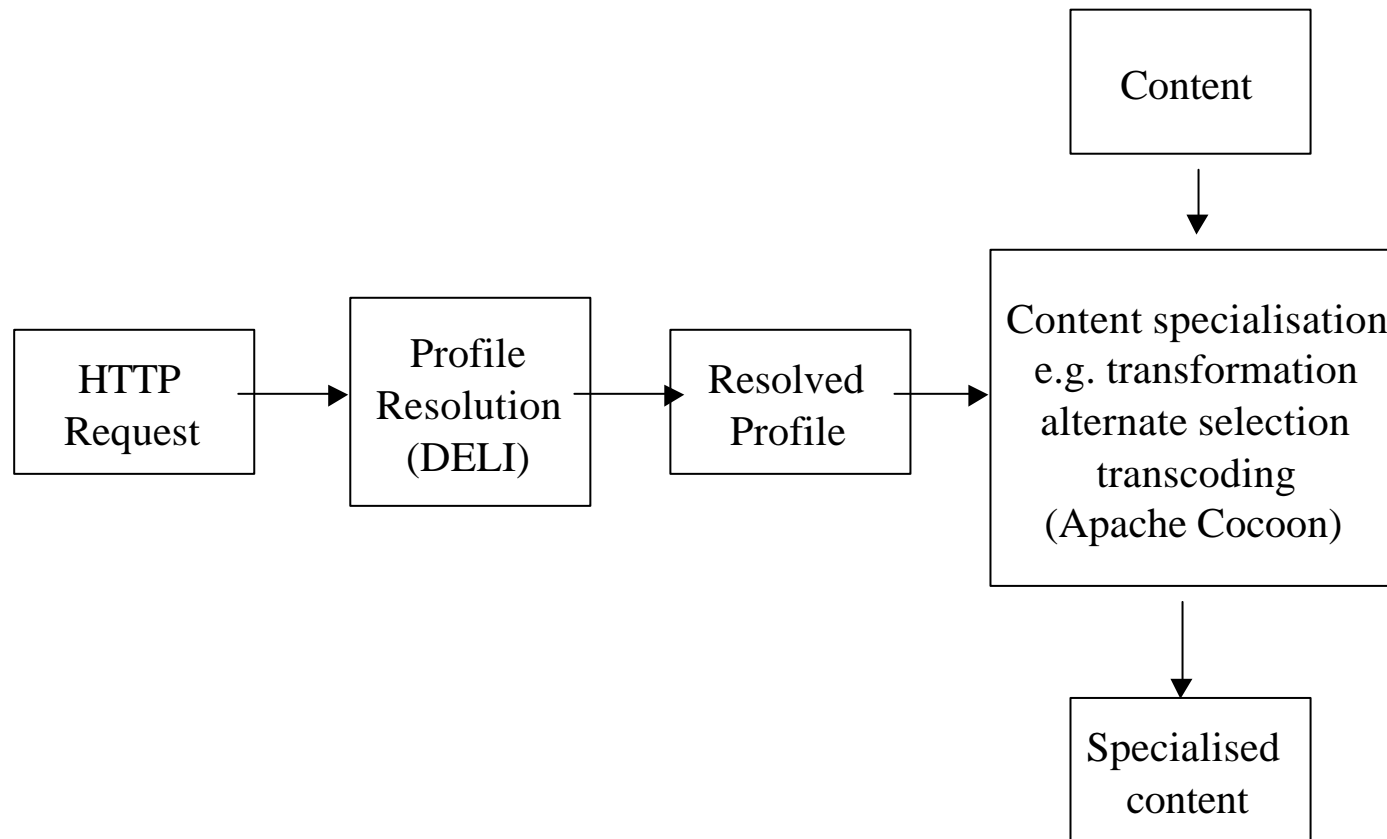
*mark-h\_butler@hp.com*

HP Labs Bristol



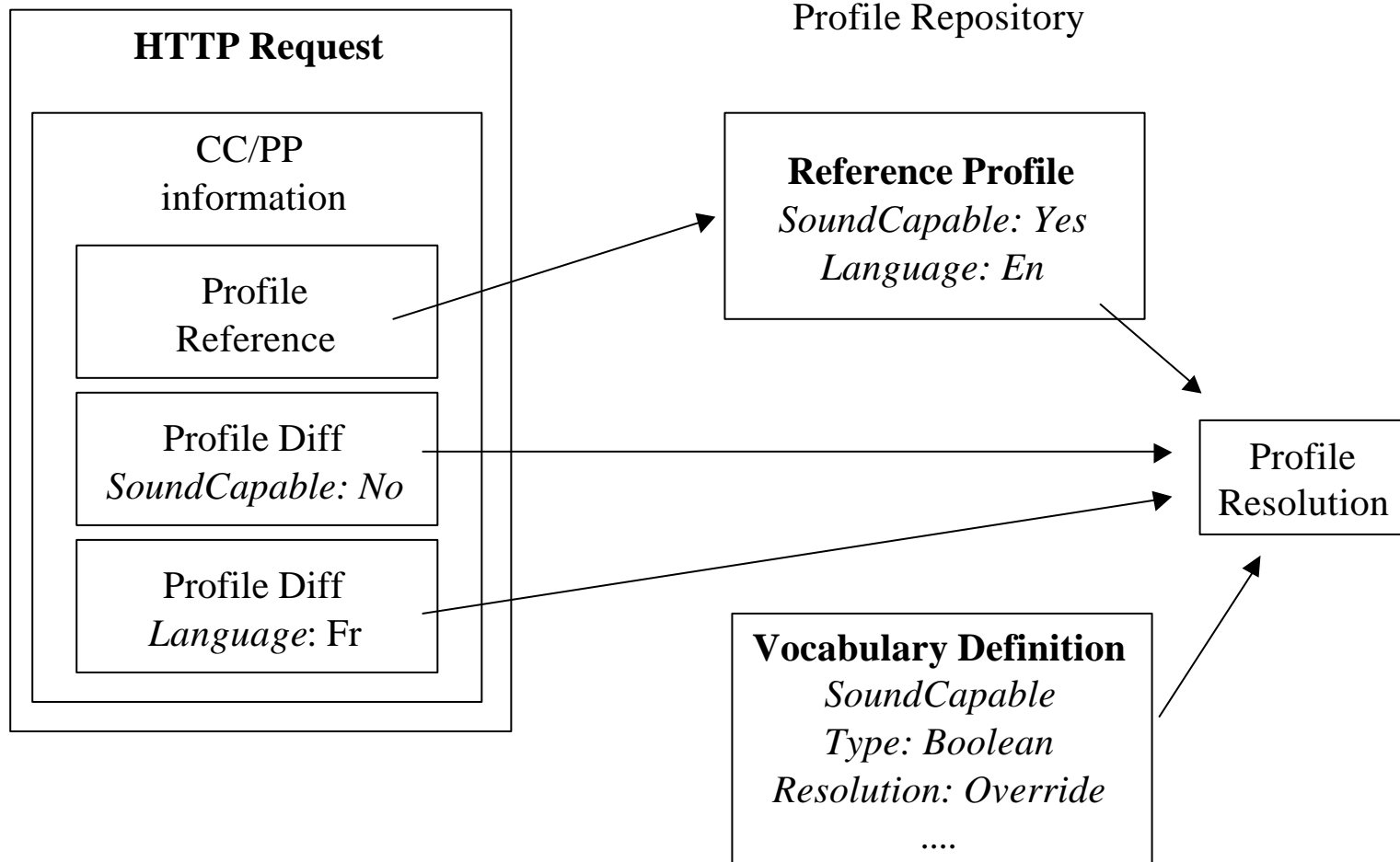
## DELI: Delivery Context Library

---





## Profile resolution in CC/PP and UAProf

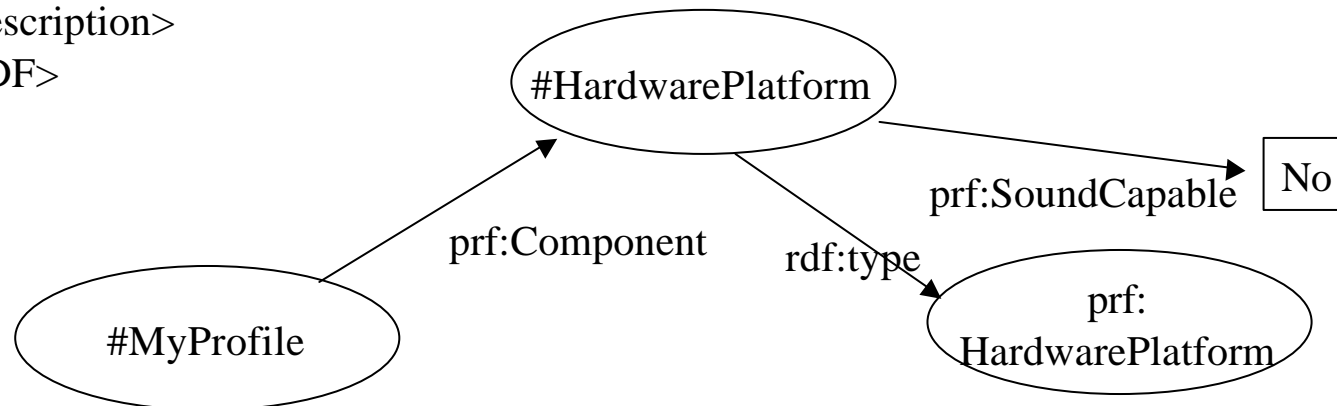




## Use of RDF in CC/PP and UAProf

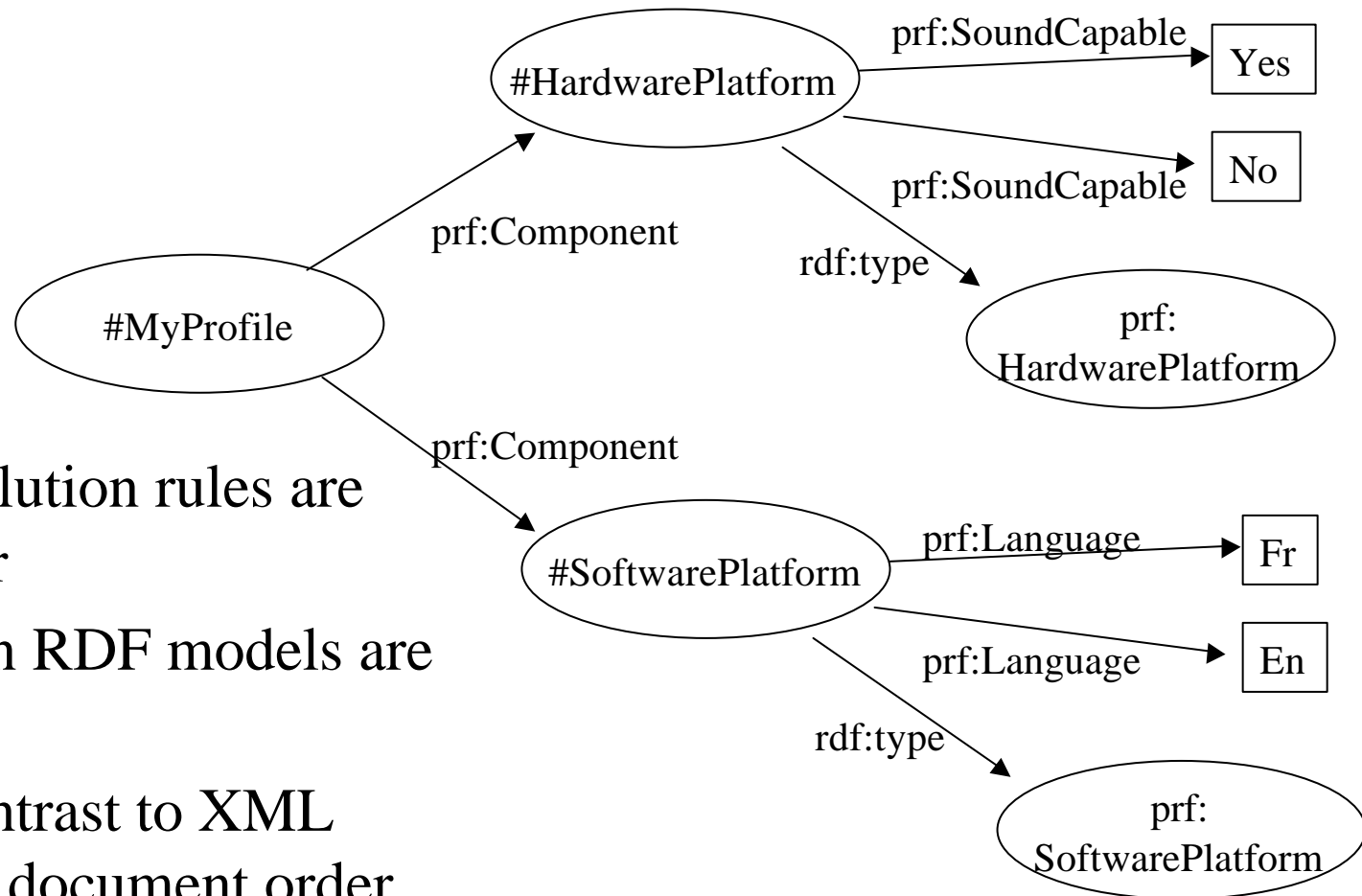
---

```
<?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">
        <rdf:type
rdf:resource="http://www.mydevice.com/vocab/version#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

---

```
<prf:component>
```

```
<rdf:Description rdf:ID="HardwarePlatform">
```

```
<rdf:type rdf:resource =
```

```
"http://www.wapforum.org/profiles/UAPROF/ccppschemata20010430#HardwarePlatform"/>
```

```
<prf:BitsPerPixel>2</prf:BitsPerPixel>
```

```
</rdf:Description>
```

```
</prf:component>
```

```
<prf:component>
```

```
<prf:HardwarePlatform rdf:about="#HardwarePlatform"
```

```
prf:BitsPerPixel="2"/>
```

```
</prf:component>
```

```
<prf:component>
```

```
<prf:HardwarePlatform rdf:ID="HardwarePlatform">
```

```
<prf:BitsPerPixel>2</prf:BitsPerPixel>
```

```
</prf:HardwarePlatform>
```

```
</prf:component>
```

- 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/ccpps-schema-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>
```



## 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>