

Redefining Attributes in XACML to Support Relationship-Based Access Control Policies

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1 Introduction

todo.

2 Abbreviations

To avoid lengthy XML code, I use the following abbreviations and redact XML namespaces where the context is clear.

AD	AttributeDesignator
AId	AttributeId
AV	AttributeValue
At	Attribute
DT	DataType

3 Attribute over an Attribute Bag

3.1 Examples

3.1.1 IPC profile Example

```
<At AId="request" DataType="At" >
  <At AId="subject" DT="At" >
    <At AId="subject-id" DT="String">
      <AV>Alice</AV>
    </At>
  </At>
  <At AId="resource" DT="At" >
    <At AId="store" DT="At">
      <At AId="store-id" DT="String">
        <AV>tunes.com</AV>
      </At>
    </At>
  </At>
  <At AId="action" DT="At">
    <At AId="action-id" DT="String">
      <AV>play</AV>
    </At>
  </At>
  <At AId="device-context" DT="At">
    <At AId="device-type" DT="String">
      <AV>iPhone</AV>
    </At>
  </At>
  <At AId="environment" DT="At">
    <At AId="location" DT="At">
      <At AId="zone" DT="String">
        <AV>EU</AV>
      </At>
    </At>
  </At>
</At>

<At AId="subscription" DT="At" >
  <AOf AId="subject" />
  <AOf AId="resource/store" />
  <AOf AId="action/device-context" />
  <AOf AId="environment/location" />
  <At AId="valid" DT="Boolean">
    <AV>true</AV>
  </At>
</At>
```

```
<Apply FunctionId="Boolean-equal">
  <AV DT="Boolean">true</AV>
  <AD AId="valid" DT="Boolean" >
    <AD AId="subscription" DT="At" >
      <AD AId="subject" DT="At" >
        <AD AId="request" DT="At" />
      </AD>
      <AD AId="store" DT="At" >
        <AD AId="resource" DT="At" >
          <AD AId="request" DT="At" />
        </AD>
      </AD>
      <AD AId="store" DT="At" >
        <AD AId="resource" DT="At" >
          <AD AId="request" DT="At" />
        </AD>
      </AD>
      <AD AId="device-context" DT="At" >
        <AD AId="action" DT="At" >
          <AD AId="request" DT="At" />
        </AD>
      </AD>
      <AD AId="location" DT="At" >
        <AD AId="environment" DT="At" >
          <AD AId="request" DT="At" />
        </AD>
      </AD>
    </AD>
  </AD>
</Apply>
```