

附錄 A

Ontology 詳細內容

Ontology A.1 目標範例 (target.owl)

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF
  xmlns="http://www3.nccu.edu.tw/~93356026/target.owl#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:environment="http://www3.nccu.edu.tw/~93356026/environment.owl#"
  xmlns:user="http://www3.nccu.edu.tw/~93356026/user.owl#"
  xmlns:resource="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#"
  xmlns:action="http://www3.nccu.edu.tw/~93356026/action.owl#"
  xmlns:result="http://www3.nccu.edu.tw/~93356026/result.owl#"
  xmlns:policy="http://www3.nccu.edu.tw/~93356026/policy.owl#"
  xmlns:example="http://www3.nccu.edu.tw/~93356026/example.owl#">
  <owl:Ontology><rdf:Comment>target ontology</rdf:Comment></owl:Ontology>

  <owl:ObjectProperty rdf:ID="targetUser">
    <rdfs:domain rdf:Resource="http://www3.nccu.edu.tw/~93356026/user.owl#Target"/>
    <rdfs:range rdf:Resource="#User"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:ID="targetResource">
    <rdfs:domain rdf:Resource="#Target"/>
    <rdfs:range rdf:Resource="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#ObjectInfo"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:ID="targetAction">
    <rdfs:domain rdf:Resource="#Target"/>
    <rdfs:range rdf:Resource="http://www3.nccu.edu.tw/~93356026/action.owl#Action"/>
  </owl:ObjectProperty>
  <owl:ObjectProperty rdf:ID="targetEnvironment">
    <rdfs:domain rdf:Resource="#Target"/>
    <rdfs:range
      rdf:Resource="http://www3.nccu.edu.tw/~93356026/environment.owl#Environment"/>
  </owl:ObjectProperty>

```

Ontology A.2 目標範例 (target.owl)–續

```
<owl:Class rdf:ID="Target">
  <rdfs:subClassOf>
    <owl:OnRestriction>
      <owl:onProperty rdf:Resource="targetUser"/>
      <owl:minCardinality
        rdf:datatype="http://www.w3.org/2001/XMLSchema#nonNegativeInteger">
        1</owl:minCardinality>
      </owl:OnRestriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty rdf:Resource="targetResource"/>
        <owl:minCardinality
          rdf:datatype="http://www.w3.org/2001/XMLSchema#nonNegativeInteger">
          1</owl:minCardinality>
        </owl:OnRestriction>
      </rdfs:subClassOf>

    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty rdf:Resource="targetAction"/>
        <owl:minCardinality
          rdf:datatype="http://www.w3.org/2001/XMLSchema#nonNegativeInteger">
          1</owl:minCardinality>
        </owl:OnRestriction>
      </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty rdf:Resource="targetEnvironment"/>
        </owl:OnRestriction>
      </rdfs:subClassOf>
    </owl:Class>

</rdf:RDF>
```

Ontology A.3 使用者範例 (user.owl)

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF
  xmlns="http://www3.nccu.edu.tw/~93356026/user.owl#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:environment="http://www3.nccu.edu.tw/~93356026/environment.owl#"
  xmlns:resoucre="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#"
  xmlns:action="http://www3.nccu.edu.tw/~93356026/action.owl#"
  xmlns:policy="http://www3.nccu.edu.tw/~93356026/policy.owl#"
  xmlns:result="http://www3.nccu.edu.tw/~93356026/result.owl#"
  xmlns:target="http://www3.nccu.edu.tw/~93356026/target.owl#"
  xmlns:example="http://www3.nccu.edu.tw/~93356026/example.owl#">
  <owl:Ontology><rdfs:comment>user ontology</rdfs:comment></owl:Ontology>
  <owl:Class rdf:ID="User">
    <rdfs:subClassOf>
      <owl:OnRestriction><owl:onProperty rdf:Resource="#hasName"/></owl:OnRestriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:OnRestriction><owl:onProperty rdf:Resource="#hasNAI"/></owl:OnRestriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:OnRestriction><owl:onProperty rdf:Resource="#hasSIMCard"/></owl:OnRestriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:OnRestriction><owl:onProperty rdf:Resource="#engagedIn"/></owl:OnRestriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty rdf:Resource="#locatedIn"/>
        <owl:allValueFrom
          rdf:Resource="http://www3.nccu.edu.tw/~93356026/environment.owl#UserEnvironment"/>
        <owl:minCardinality
          rdf:datatype="http://www.w3.org/2001/XMLSchema#nonNegativeInteger">
          1</owl:minCardinality>
        </owl:OnRestriction>
      </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:OnRestriction><owl:onProperty rdf:Resource="#own"/></owl:OnRestriction>
    </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:ID="Device"/>
  <!-- subclass of user: staff, partner, manager-->
  <owl:Class rdf:ID="Staff"><rdfs:subClassOf rdf:Resource="#User"/></owl:Class>
  <owl:Class rdf:ID="Partner"><rdfs:subClassOf rdf:Resource="#User"/></owl:Class>
  <owl:Class rdf:ID="Manager"><rdfs:subClassOf rdf:Resource="#User"/></owl:Class>
```

Ontology A.4 使用者範例 (user.owl)-續

```
<!--object property -->
<owl:ObjectProperty rdf:ID="own">
  <rdfs:domain rdf:Resource="#User"/>
  <rdfs:range rdf:Resource="#Device"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="engagedIn">
  <!-- engaged in some action-->
  <rdfs:domain rdf:Resource="#User"/>
  <rdfs:range>
    <owl:Class>
      <owl:unionOf rdf:parseType="Collection">
        <owl:Class rdf:about="http://www3.nccu.ed.tw/~93356026/action.owl#Copy"/>
        <owl:Class rdf:about="http://www3.nccu.ed.tw/~93356026/action.owl#Read"/>
        <owl:Class rdf:about="http://www3.nccu.ed.tw/~93356026/action.owl#Download"/>
        <owl:Class rdf:about="http://www3.nccu.ed.tw/~93356026/action.owl#Modify"/>
      </owl:unionOf>
    </owl:Class>
  </rdfs:range>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="locatedIn">
  <rdfs:domain>
    <owl:Class>
      <owl:unionOf rdf:parseType="Collection">
        <owl:Class rdf:about="#User"/>
        <owl:Class rdf:about="http://www3.nccu.ed.tw/~93356026/resource.owl#Resource"/>
      </owl:unionOf>
    </owl:Class>
  </rdfs:domain>
</owl:ObjectProperty>
<owl:DatatypeProperty rdf:ID="hasName">
  <rdfs:domain>
    <owl:Class>
      <owl:unionOf rdfs:parseType="Collection">
        <owl:Class rdfs:Resource="#User"/>
        <owl:Class rdf:Resource="http://www3.nccu.ed.tw/~93356026/objectinfo.owl#ObjectInfo"/>
      </owl:unionOf>
    </owl:Class>
  </rdfs:domain>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:ID="hasNAI">
  <rdfs:domain rdf:Resource="#User"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:ID="hasSIMCard">
  <rdfs:domain rdf:Resource="#User"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
</owl:DatatypeProperty>
</rdf:RDF>
```

Ontology A.5 資源範例 (objectInfo.owl)

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF
  xmlns="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:environment="http://www3.nccu.edu.tw/~93356026/environment.owl#"
  xmlns:user="http://www3.nccu.edu.tw/~93356026/user.owl#"
  xmlns:result="http://www3.nccu.edu.tw/~93356026/result.owl#"
  xmlns:action="http://www3.nccu.edu.tw/~93356026/action.owl#"
  xmlns:target="http://www3.nccu.edu.tw/~93356026/target.owl#"
  xmlns:policy="http://www3.nccu.edu.tw/~93356026/policy.owl#"
  xmlns:example="http://www3.nccu.edu.tw/~93356026/example.owl#">
  <owl:Ontology><rdfs:comment>resource and action ontology</rdfs:comment></owl:Ontology>
  <owl:Class rdf:ID="ObjectInfo">
    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty
          rdf:Resource="http://www3.nccu.edu.tw/~93356026/user.owl#locatedIn" />
        <owl:allValueFrom
          rdf:Resource="http://www3.nccu.edu.tw/~93356026/environment.owl#ResourceEnvironment"/>
        <owl:minCardinality
          rdf:datatype="http://www.w3.org/2001/XMLSchema#nonNegativeInteger">1</owl:minCardinality>
        </owl:OnRestriction>
      </rdfs:subClassOf>
    </owl:Class>
    <owl:DatatypeProperty rdf:ID="hasStatus">
      <rdfs:domain rdf:Resource="#ObjectInfo"/>
      <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
    </owl:DatatypeProperty>
    <owl:DatatypeProperty rdf:ID="hasURL">
      <rdfs:domain rdf:Resource="#ObjectInfo"/>
      <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
    </owl:DatatypeProperty>
    <owl:DatatypeProperty rdf:ID="hasServiceType">
      <rdfs:domain rdf:Resource="#ObjectInfo"/>
      <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
    </owl:DatatypeProperty>
  </rdf:RDF>
```

Ontology A.6 存取動作範例 (action.owl)

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF
  xmlns="http://www3.nccu.edu.tw/~93356026/action.owl#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:environment="http://www3.nccu.edu.tw/~93356026/environment.owl#"
  xmlns:result="http://www3.nccu.edu.tw/~93356026/result.owl#"
  xmlns:user="http://www3.nccu.edu.tw/~93356026/user.owl#"
  xmlns:resource="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#"
  xmlns:target="http://www3.nccu.edu.tw/~93356026/target.owl#"
  xmlns:policy="http://www3.nccu.edu.tw/~93356026/policy.owl#"
  xmlns:example="http://www3.nccu.edu.tw/~93356026/example.owl#">
  <owl:Ontology><rdfs:Comment>action ontology</rdfs:Comment></owl:Ontology>

  <owl:Class rdf:ID="Action">
    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty rdf:Resource="#operateOn"/>
        <owl:minCardinality
          rdf:datatype="http://www.w3.org/2001/XMLSchema#nonNegativeInteger">1</owl:minCardinality>
      </owl:OnRestriction>
    </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:ID="Use">
    <rdfs:subClassOf rdf:Resource="#Action"/>
  </owl:Class>
  <owl:Class rdf:ID="Copy">
    <rdfs:subClassOf rdf:Resource="#Action"/>
  </owl:Class>
  <owl:Class rdf:ID="Read">
    <rdfs:subClassOf rdf:Resource="#Action"/>
  </owl:Class>
  <owl:Class rdf:ID="Moodify">
    <rdfs:subClassOf rdf:Resource="#Action"/>
  </owl:Class>
  <owl:Class rdf:ID="Download">
    <rdfs:subClassOf rdf:Resource="#Action"/>
  </owl:Class>
  <owl:ObjectProperty rdf:ID="operateOn">
    <rdfs:domain rdf:Resource="#Action"/>
    <rdfs:range rdf:Resource="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#ObjectInfo"/>
  </owl:ObjectProperty>
  <owl:DatatypeProperty rdf:ID="hasAccessTime">
    <rdfs:domain rdf:Resource="#Action"/>
    <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#dateTime"/>
  </owl:DatatypeProperty>
</rdf:RDF>
```

Ontology A.7 存取環境範例 (environment.owl)

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF
  xmlns="http://www3.nccu.edu.tw/~93356026/environment.owl#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:user="http://www3.nccu.edu.tw/~93356026/user.owl#"
  xmlns:resoucre="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#"
  xmlns:action="http://www3.nccu.edu.tw/~93356026/action.owl#"
  xmlns:target="http://www3.nccu.edu.tw/~93356026/target.owl#"
  xmlns:result="http://www3.nccu.edu.tw/~93356026/result.owl#"
  xmlns:policy="http://www3.nccu.edu.tw/~93356026/policy.owl#"
  xmlns:example="http://www3.nccu.edu.tw/~93356026/example.owl#">
  <owl:Ontology><rdfs:comment>Environment</rdfs:comment>
  </owl:Ontology>
  <owl:Class rdf:ID="Enviornment">
    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty rdf:Resource="#requestFrom"/>
      </owl:OnRestriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty rdf:Resource="#virtualAddress"/>
      </owl:OnRestriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty rdf:Resource="#utilize"/>
      </owl:OnRestriction>
    </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:ID="UserEnvironment">
    <rdfs:subClassOf rdf:Resource="Environment"/>
  </owl:Class>
  <owl:Class rdf:ID="ResourceEnvironment">
    <rdfs:subClassOf rdf:Resource="Environment"/>
  </owl:Class>
  <owl:Class rdf:ID="AccessPoint">
    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty rdf:Resource="#hasNASIP"/>
      </owl:OnRestriction>
    </rdfs:subClassOf>
  </owl:Class>
</rdf:RDF>
```

Ontology A.8 存取環境範例 (environment.owl)-續

```
<owl:Class rdf:ID="VirtualLocation">
  <rdfs:subClassOf>
    <owl:OnRestriction>
      <owl:onProperty rdf:Resource="#hasIP"/>
    </owl:OnRestriction>
  </rdfs:subClassOf>
  <rdfs:subClassOf>
    <owl:OnRestriction>
      <owl:onProperty rdf:Resource="#hasProxy"/>
    </owl:OnRestriction>
  </rdfs:subClassOf>
  <rdfs:subClassOf>
    <owl:OnRestriction>
      <owl:onProperty rdf:Resource="#hasDomain"/>
    </owl:OnRestriction>
  </rdfs:subClassOf>
</owl:Class>
<owl:Class rdf:ID="NetworkMedia"/>

<owl:Class rdf:ID="LAN">
  <rdfs:subClassOf rdf:Resource="#NetworkMedia"/>
  <owl:disjointWith rdf:Resource="#WLAN"/>
  <owl:disjointWith rdf:Resource="#VPN"/>
  <owl:disjointWith rdf:Resource="#3G"/>
</owl:Class>

<owl:Class rdf:ID="WLAN">
  <rdfs:subClassOf rdf:Resource="#NetworkMedia"/>
  <owl:disjointWith rdf:Resource="#LAN"/>
  <owl:disjointWith rdf:Resource="#VPN"/>
  <owl:disjointWith rdf:Resource="#3G"/>
</owl:Class>

<owl:Class rdf:ID="VPN">
  <rdfs:subClassOf rdf:Resource="#NetworkMedia"/>
  <owl:disjointWith rdf:Resource="#LAN"/>
  <owl:disjointWith rdf:Resource="#WLAN"/>
  <owl:disjointWith rdf:Resource="#3G"/>
</owl:Class>

<owl:Class rdf:ID="3G">
  <rdfs:subClassOf rdf:Resource="#NetworkMedia"/>
  <owl:disjointWith rdf:Resource="#WLAN"/>
  <owl:disjointWith rdf:Resource="#VPN"/>
  <owl:disjointWith rdf:Resource="#LAN"/>
</owl:Class>
```

Ontology A.9 存取環境範例 (environment.owl)-續

```
<owl:ObjectProperty rdf:ID="requestFrom">
  <rdf:domain rdf:Resource="#Environment"/>
  <rdf:range rdf:Resource="#AccessPoint"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="virtualAddress">
  <rdf:domain rdf:Resource="#Environment"/>
  <rdf:range rdf:Resource="#VirtualLocation"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="utilize">
  <rdf:domain rdf:Resource="#Environment"/>
  <rdf:range>
    <owl:Class>
      <owl:unionOf rdf:parseType="Collection">
        <owl:Class rdf:about="#LAN"/>
        <owl:Class rdf:about="#WLAN"/>
        <owl:Class rdf:about="#VPN"/>
        <owl:Class rdf:about="#3G"/>
      </owl:unionOf>
    </owl:Class>
  </rdf:range>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="determine">
  <rdf:domain rdf:Resource="#NetworkMedia"/>
  <rdf:range
    rdf:Resource="http://www3.nccu.edu.tw/~93356026/result.owl#EncryptionConstraint"/>
</owl:ObjectProperty>
<owl:DatatypeProperty rdf:ID="hasNASIP">
  <rdfs:domain rdf:Resource="#AccessPoint"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:ID="hasIP">
  <rdfs:domain rdf:Resource="#VirtualLocation"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:ID="hasProxy">
  <rdfs:domain rdf:Resource="#VirtualLocation"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:ID="hasDomain">
  <rdfs:domain rdf:Resource="#VirtualLocation"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
</owl:DatatypeProperty>
</rdf:RDF>
```

Ontology A.10 評估結果範例範例 (result.owl)

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF
  xmlns="http://www3.nccu.edu.tw/~93356026/result.owl#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:environment="http://www3.nccu.edu.tw/~93356026/environment.owl#"
  xmlns:user="http://www3.nccu.edu.tw/~93356026/user.owl#"
  xmlns:resource="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#"
  xmlns:action="http://www3.nccu.edu.tw/~93356026/action.owl#"
  xmlns:target="http://www3.nccu.edu.tw/~93356026/target.owl#"
  xmlns:policy="http://www3.nccu.edu.tw/~93356026/policy.owl#"
  xmlns:example="http://www3.nccu.edu.tw/~93356026/example.owl#">
  <owl:Ontology><rdfs:Comment>effect and configuration ontology</rdfs:Comment></owl:Ontology>
  <owl:Class rdf:ID="Effect"/>
  <owl:Class rdf:ID="Grant"><rdfs:subClassOf rdf:Resource="#Effect"/></owl:Class>
  <owl:Class rdf:ID="Deny"><rdfs:subClassOf rdf:Resource="#Effect"/></owl:Class>
  <owl:Class rdf:ID="Configuration">
    <rdfs:subClassOf>
      <owl:OnRestriction><owl:onProperty rdf:Resource="#timeLimit"/></owl:OnRestriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:OnRestriction><owl:onProperty rdf:Resource="#encryptionLimit"/></owl:OnRestriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:OnRestriction><owl:onProperty rdf:Resource="#ipLimit"/></owl:OnRestriction>
    </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:ID="TimeConstraint"/>
  <owl:Class rdf:ID="EncryptionConstraint">
    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty rdf:Resource="#set"/>
        <owl:maxCardinality
          rdf:datatype="http://www.w3.org/2001/XMLSchema#nonNegativeInteger">1</owl:maxCardinality>
      </owl:OnRestriction>
    </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:ID="IPFilterConstraint"/>
  <owl:Class rdf:ID="Free">
    <rdfs:subClassOf rdf:Resource="EncryptionConstraint"/>
  </owl:Class>
  <owl:Class rdf:ID="Basic">
    <rdfs:subClassOf rdf:Resource="EncryptionConstraint"/>
  </owl:Class>
  <owl:Class rdf:ID="Middle">
    <rdfs:subClassOf rdf:Resource="EncryptionConstraint"/>
  </owl:Class>
  <owl:Class rdf:ID="High">
    <rdfs:subClassOf rdf:Resource="EncryptionConstraint"/>
  </owl:Class>

```

Ontology A.11 評估結果範例(result.owl)–續

```
<owl:Class rdf:ID="DES"><rdfs:subClassOf rdf:Resource="Encryption"/></owl:Class>
<owl:Class rdf:ID="MMPE"><rdfs:subClassOf rdf:Resource="Encryption"/></owl:Class>
<owl:Class rdf:ID="3DES"><rdfs:subClassOf rdf:Resource="Encryption"/></owl:Class>
<owl:ObjectProperty rdf:ID="timeLimit">
  <rdfs:domain rdf:Resource="#Configuraiton"/><rdfs:range rdf:Resource="#TimeConstraint"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="encryptionLimit">
  <rdfs:domain rdf:Resource="#Configuraiton"/><rdfs:range rdf:Resource="#EncryptionConstraint"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="ipLimit">
  <rdfs:domain rdf:Resource="#Configuraiton"/>
  <rdfs:range rdf:Resource="#IPFilterConstraint"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="set">
  <rdfs:domain rdf:Resource="#EncryptionConstraint"/>
  <rdfs:range> <owl:Class>
    <owl:unionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#DES"/>
      <owl:Class rdf:about="#MMPE"/>
      <owl:Class rdf:about="#3DES"/>
    </owl:unionOf>
  </owl:Class></rdfs:range>
</owl:ObjectProperty>
<owl:DatatypeProperty rdf:ID="hasStartTime">
  <rdfs:domain rdf:Resource="#TimeConstraint"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#dateTime"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:ID="hasEndTime">
  <rdfs:domain rdf:Resource="#TimeConstraint"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#dateTime"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:ID="hasIdleTime">
  <rdfs:domain rdf:Resource="#TimeConstraint"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#time"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:ID="hasConnectionTime">
  <rdfs:domain rdf:Resource="#TimeConstraint"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#time"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:ID="inputIP">
  <rdfs:domain rdf:Resource="#IPFilterConstraint"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:ID="outputIP">
  <rdfs:domain rdf:Resource="#IPFilterConstraint"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:ID="evaluationResult">
  <rdfs:domain rdf:Resource="#Effect"/>
  <rdfs:range rdf:Resource="http://www.w3.org/2001/XMLSchema#string"/>
</owl:DatatypeProperty>
</rdf:RDF>
```

Ontology A.12 政策範例 (policy.owl)

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF
  xmlns="http://www3.nccu.edu.tw/~93356026/policy.owl#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:user="http://www3.nccu.edu.tw/~93356026/user.owl#"
  xmlns:resource="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#"
  xmlns:action="http://www3.nccu.edu.tw/~93356026/action.owl#"
  xmlns:result="http://www3.nccu.edu.tw/~93356026/result.owl#"
  xmlns:target="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#"
  xmlns:environment="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#"
  xmlns:example="http://www3.nccu.edu.tw/~93356026/example.owl#">
  <owl:Ontology><rdfs:Comment>policy ontology</rdfs:Comment></owl:Ontology>

  <owl:Class rdf:ID="ACPolicy">
    <rdfs:subClassOf>
      <owl:OnRestriction>
        <owl:onProperty rdf:Resource="#onCondition"/>
        <owl:minCardinality
          rdf:datatype="http://www.w3.org/2001/XMLSchema#nonNegativeInteger">
          1</owl:minCardinality>
        </owl:OnRestriction>
      </rdfs:subClassOf>
      <rdfs:subClassOf>
        <owl:OnRestriction>
          <owl:onProperty rdf:Resource="#hasResult"/>
          <owl:minCardinality
            rdf:datatype="http://www.w3.org/2001/XMLSchema#nonNegativeInteger">1</owl:minCardinality>
          </owl:OnRestriction>
        </rdfs:subClassOf>
        <rdfs:subClassOf>
          <owl:OnRestriction>
            <owl:onProperty rdf:Resource="#hasLimit"/>
          </owl:OnRestriction>
        </rdfs:subClassOf>
      </owl:Class>
      <owl:ObjectProperty rdf:ID="onCondition">
        <rdfs:domain rdf:Resource="#Policy"/>
        <rdfs:range rdf:Resource="http://www3.nccu.edu.tw/~93356026/objectinfo.owl#Target"/>
      </owl:ObjectProperty>
      <owl:ObjectProperty rdf:ID="hasResult">
        <rdfs:domain rdf:Resource="#Policy"/>
        <rdfs:range rdf:Resource="http://www3.nccu.edu.tw/~93356026/result.owl#Effect"/>
      </owl:ObjectProperty>
      <owl:ObjectProperty rdf:ID="hasLimit">
        <rdfs:domain rdf:Resource="#Policy"/>
        <rdfs:range rdf:Resource="http://www3.nccu.edu.tw/~93356026/result.owl#Configuration"/>
      </owl:ObjectProperty>
    </rdf:RDF>
```