



# Information technology — Multimedia framework (MPEG-21) — Part 21: Media Contract Ontology

## TECHNICAL CORRIGENDUM 1

*Technologies de l'information — Cadre multimédia (MPEG-21) —*

*Partie 21: Ontologie pour contrats de médias*

*RECTIFICATIF TECHNIQUE 1*

Corrigendum 1 to ISO/IEC 21000-21:2013 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, Coding of audio, picture, multimedia and hypermedia information.

---

Replace the normative MCO ontologies `mco-core.owl` and `mco-ipre.owl` with the files attached to this document.

Replace subclause 7.2.2.1 with the following:

### 7.2.2.1 Example

Figure 4 depicts the diagram of an example for this context, while the subsequent box contains the same entities serialized in RDF/XML.

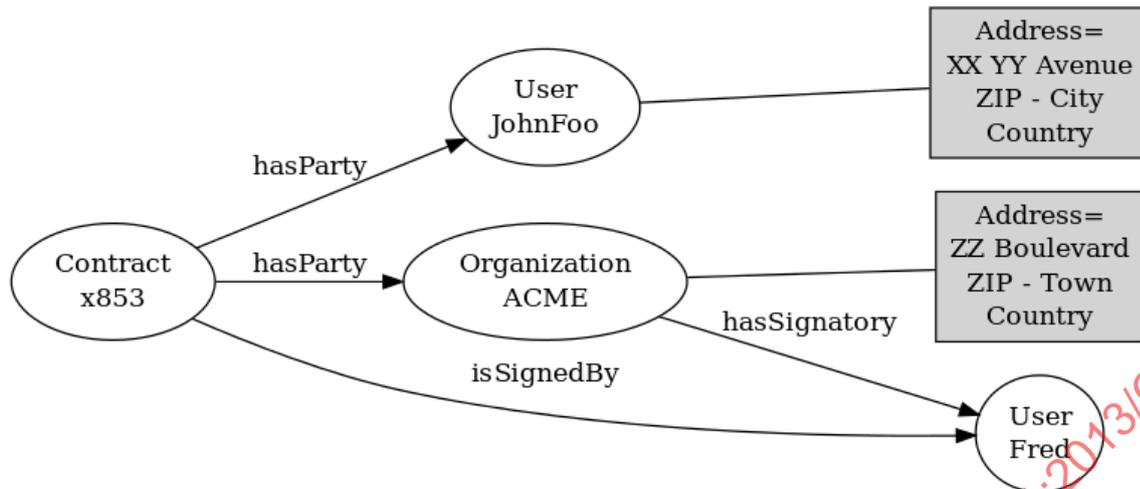


Figure 4 — Example of contract with parties

```

<!DOCTYPE rdf:RDF [
  <!ENTITY mcoex "urn:mpeg:mpeg21:mco:examples#" >
  <!ENTITY mco-core "urn:mpeg:mpeg21:mco:core:2012#" >
  <!ENTITY DII-NS "urn:mpeg:mpeg21:2002:01-DII-NS#" >
  <!ENTITY mco-ipre "urn:mpeg:mpeg21:mco:ipre:2012#" >
  <!ENTITY dc "http://purl.org/dc/elements/1.1/" >
  <!ENTITY xsd "http://www.w3.org/2001/XMLSchema#" >
  <!ENTITY mvco "http://purl.oclc.org/NET/mvco.owl#" >
  <!ENTITY rdfs "http://www.w3.org/2000/01/rdf-schema#" >
  <!ENTITY rdf "http://www.w3.org/1999/02/22-rdf-syntax-ns#" >
]>

<rdf:RDF xmlns="http://www.w3.org/2002/07/owl#"
  xml:base="http://www.w3.org/2002/07/owl"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:mco-core="urn:mpeg:mpeg21:mco:core:2012#"
  xmlns:mco-ipre="urn:mpeg:mpeg21:mco:ipre:2012#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:mvco="http://purl.oclc.org/NET/mvco.owl#">
  <Ontology rdf:about="urn:mpeg:mpeg21:mco:examples/mco.2012-10-03.852.owl">
    <imports rdf:resource="urn:mpeg:mpeg21:mco:ipre:2012"/>
  </Ontology>

  <mco-core:Organization rdf:about="&mcoex;ACME">
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    <mco-core:Address rdf:datatype="&xsd:string">ZZ Boulevard\nZIP - Town\nCountry</mco-core:Address>
    <mco-core:hasSignatory rdf:resource="&mcoex;Fred"/>
  </mco-core:Organization>

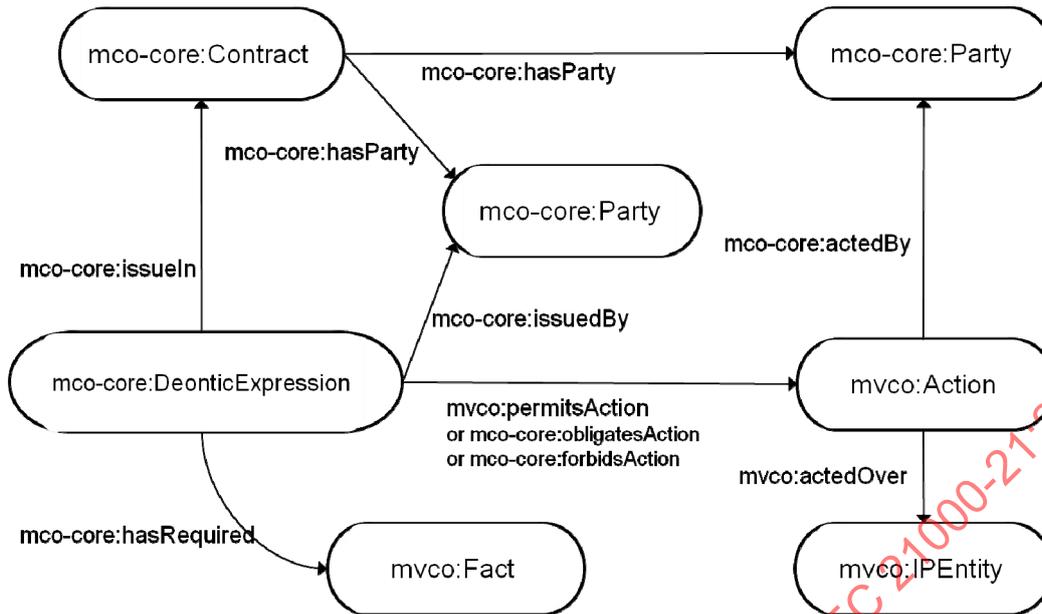
  <NamedIndividual rdf:about="&mcoex;Fred">
    <rdf:type rdf:resource="&mvco;User"/>
  </NamedIndividual>

  <NamedIndividual rdf:about="&mcoex;JohnFoo">
    <rdf:type rdf:resource="&mvco;User"/>
    <mco-core:Address rdf:datatype="&xsd:string">XX YY Avenue\nZIP - City\nCountry</mco-core:Address>
  </NamedIndividual>

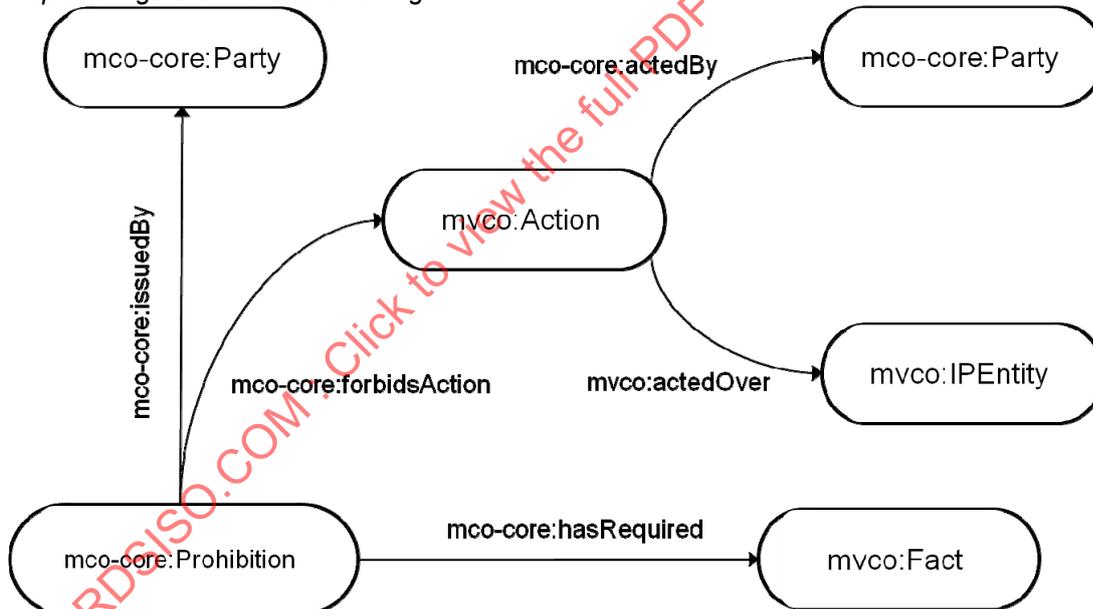
  <mco-core:Contract rdf:about="&mcoex;x853">
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    <mco-core:hasParty rdf:resource="&mcoex;ACME"/>
    <mco-core:isSignedBy rdf:resource="&mcoex;Fred"/>
    <mco-core:hasParty rdf:resource="&mcoex;JohnFoo"/>
  </mco-core:Contract>
</rdf:RDF>

```

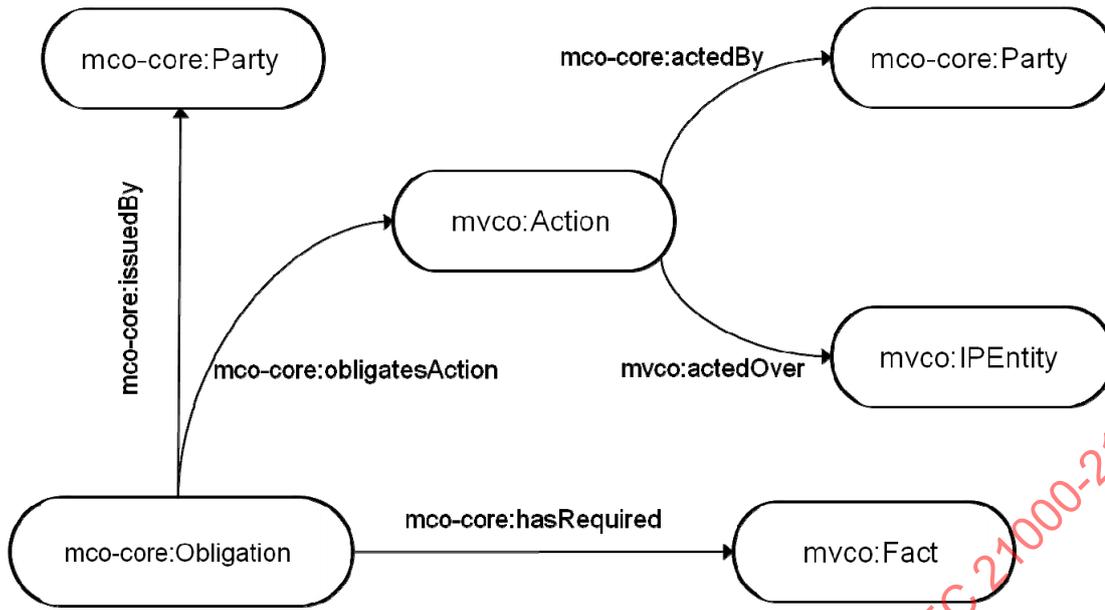
Replace Figure 6 with the following:



Replace Figure 8 with the following:



Replace Figure 9 with the following:



Replace subclause 7.2.3.3.2 with the following:

**7.2.3.3.2 Prohibition**

Figure 11 provides a simple example of prohibition, at the top, together with the equivalent permission, at the bottom.

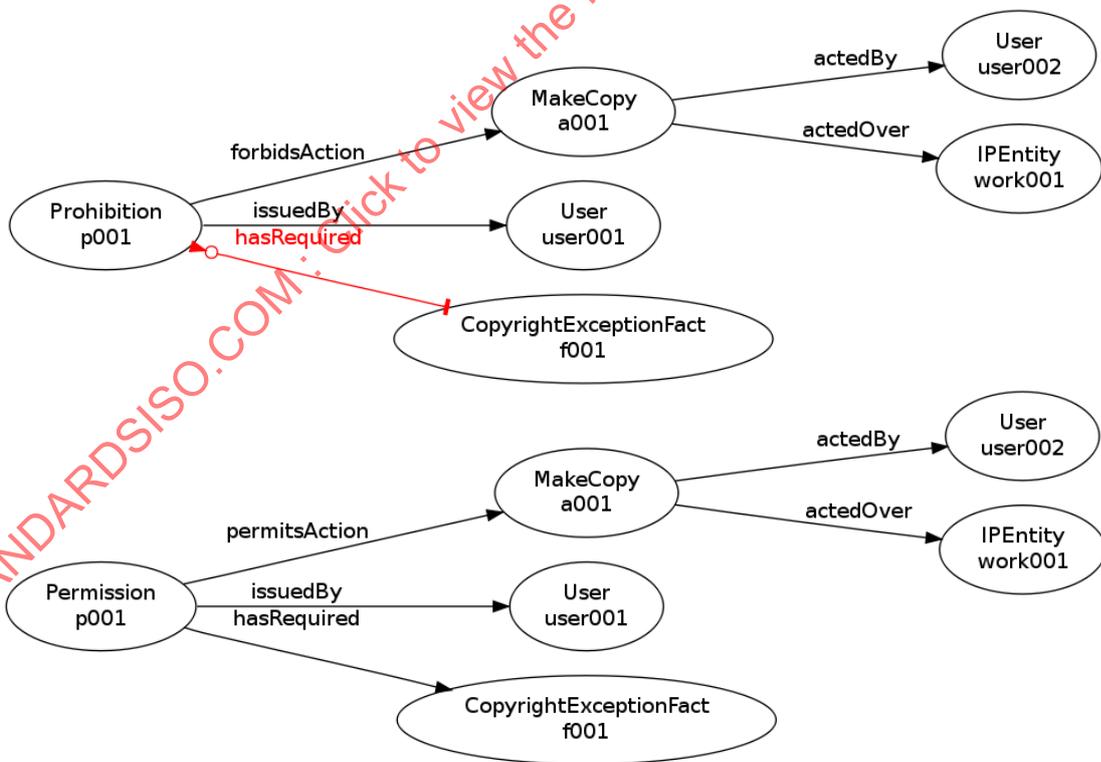


Figure 11 — Simple example of Prohibition and equivalent Permission

```

<!--entity individuals defined in the examples -->
<!ENTITY mcoex "urn:mpeg:mpeg21:mco:examples#">
<!ENTITY mvco "http://purl.oclc.org/NET/mvco.owl#">
<!ENTITY mco-core "urn:mpeg:mpeg21:mco:core:2012#">
<mco-core:Prohibition rdf:about="&mcoex;p001">
  <mco-core:issuedBy rdf:resource="&mcoex;user001"/>
</mco-core:Prohibition>
<owl:NegativePropertyAssertion>
  <owl:assertionProperty rdf:resource="&mco-core;hasRequired"/>
  <owl:sourceIndividual rdf:resource="&mcoex;p001"/>
  <owl:targetIndividual rdf:resource="&mcoex;f001"/>
</owl:NegativePropertyAssertion>
<!--or equivalently
<mvco:Permission rdf:about="&mcoex;p001">
  <mvco:permitsAction rdf:resource="&mcoex;a001"/>
  <mvco:hasRequired rdf:resource="&mcoex;f001"/>
  <mvco:issuedBy rdf:resource="&mcoex;user001"/>
</mvco:Permission>
-->
<mvco:MakeCopy rdf:about="&mcoex;a001">
  <mvco:actedBy rdf:resource="&mcoex;user002"/>
  <mvco:actedOver rdf:resource="&mcoex;work001"/>
</mvco:MakeCopy>
<mvco:User rdf:about="&mcoex;user001"/>
<mvco:User rdf:about="&mcoex;user002"/>
<mvco:IPEntity rdf:about="&mcoex;work001"/>
<mvco:CopyrightExceptionFact rdf:about="&mcoex;f001"/>

```

Replace subclause 7.2.3.3.3 with the following:

### 7.2.3.3.3 Obligation

The diagram presented in Figure 12 shows an example of obligation of acting an audiovisual distribution in the time window given by a temporal context fact. Some OWL elements of this example (with prefix `mco-ipre` in the RDF text) are defined in the media contract extension for the exploitation of intellectual property rights, presented in clause 7.3.

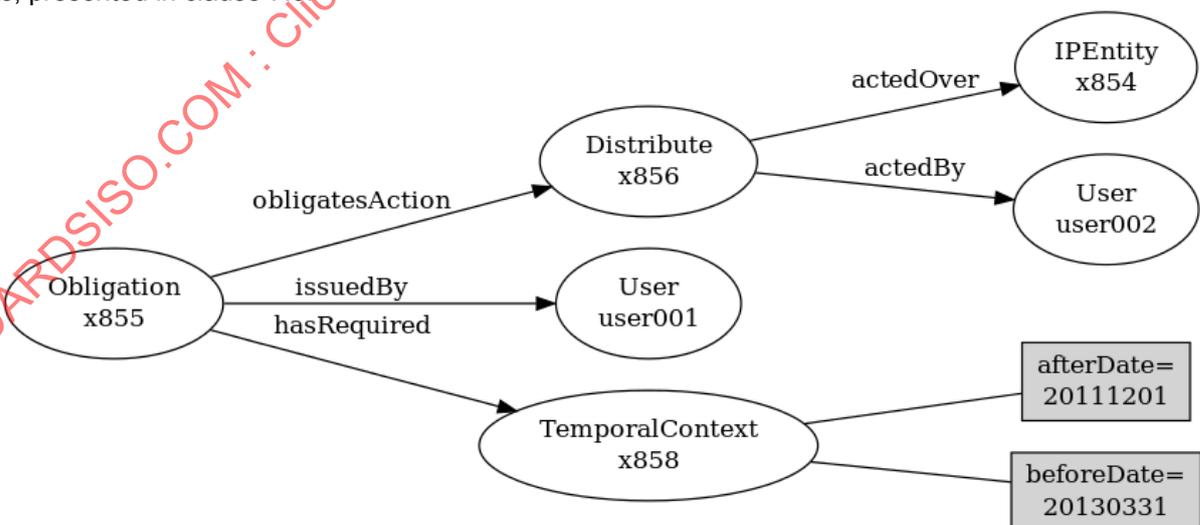


Figure 12 — Simple example of Obligation

The expression as RDF is given in the following fragment:

```

<!--entity for datatype from XML Schema -->
<!ENTITY xsd "http://www.w3.org/2001/XMLSchema#">
<!--entity individuals defined in the examples -->
<!ENTITY mcoex "urn:mpeg:mpeg21:mco:examples#">
<mco-core:Obligation rdf:about="&mcoex;x855">
  <mco-core:obligatessAction rdf:resource="&mcoex;x856"/>
  <mco-core:issuedBy rdf:resource="&mcoex;user001"/>
  <mco-core:hasRequired rdf:resource="&mcoex;x858"/>
</mco-core:Obligation>
<mvco:Distribute rdf:about="&mcoex;x856">
  <mvco:actedBy rdf:resource="&mcoex;user002"/>
  <mvco:actedOver rdf:resource="&mcoex;work001"/>
</mvco:Distribute>
<mvco:User rdf:about="&mcoex;user001"/>
<mvco:User rdf:about="&mcoex;user002"/>
<mco-ipre:TemporalContext rdf:about="&mcoex;x858">
  <mco-ipre:afterDate rdf:datatype="&xsd;date">20110722<mco-
ipre:afterDate>
  <mco-ipre:beforeDate rdf:datatype="&xsd;date">20111130</mco-
ipre:beforeDate>
</mco-ipre:TemporalContext>
<mvco:IPEntity rdf:about="&mcoex;work001"/>

```

Replace subclause 7.2.6.1 with the following:

**7.2.6.1 Example**

A simple example of using Dublin Core for metadata representation is having an ISAN identifier [10] and a title for the IP-Entity object of a contract. The corresponding excerpt of MCO document is given below, with both OWL/XML and RDF/XML serializations.

```

<Ontology xmlns="http://www.w3.org/2002/07/owl#"
xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xml:base="urn:mpeg:mpeg21:mco:examples#"
ontologyIRI="urn:mpeg:mpeg21:mco:examples">
  <Prefix name="rdf" IRI="http://www.w3.org/1999/02/22-rdf-syntax-ns#" />
  <Prefix name="xsd" IRI="http://www.w3.org/2001/XMLSchema#" />
  <Prefix name="rdfs" IRI="http://www.w3.org/2000/01/rdf-schema#" />
  <Prefix name="owl" IRI="http://www.w3.org/2002/07/owl#" />
  <Import>urn:mpeg:mpeg21:mco:ipre:2012</Import>
  <Declaration>
    <NamedIndividual IRI="#x854" />
  </Declaration>
  <ClassAssertion>
    <Class IRI="http://purl.oclc.org/NET/mvco.owl#IPEntity" />
    <NamedIndividual IRI="#x854" />
  </ClassAssertion>
  <AnnotationAssertion>
    <AnnotationProperty IRI="http://purl.org/dc/elements/1.1/identifier" />
    <IRI>#x854</IRI>
    <Literal datatypeIRI="&xsd;string">isan:ABC123YZ</Literal>
  </AnnotationAssertion>
  <AnnotationAssertion>
    <AnnotationProperty IRI="http://purl.org/dc/elements/1.1/title" />
    <IRI>#x854</IRI>
    <Literal datatypeIRI="&xsd;string">In the middle of nothing</Literal>

```

```
</AnnotationAssertion>
</Ontology>
```

```
<!DOCTYPE rdf:RDF [
  <!ENTITY mco-core "urn:mpeg:mpeg21:mco:core:2012#" >
  <!ENTITY mco-ipre "urn:mpeg:mpeg21:mco:ipre:2012#" >
  <!ENTITY dc "http://purl.org/dc/elements/1.1/" >
  <!ENTITY xsd "http://www.w3.org/2001/XMLSchema#" >
  <!ENTITY mvco "http://purl.oclc.org/NET/mvco.owl#" >
  <!ENTITY rdfs "http://www.w3.org/2000/01/rdf-schema#" >
  <!ENTITY mcoex "urn:mpeg:mpeg21:mco:examples#" >
  <!ENTITY rdf "http://www.w3.org/1999/02/22-rdf-syntax-ns#" >
]>

<rdf:RDF xmlns="http://www.w3.org/2002/07/owl#"
  xml:base="http://www.w3.org/2002/07/owl"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:mcoex="urn:mpeg:mpeg21:mco:examples#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:mco-ipre="urn:mpeg:mpeg21:mco:ipre:2012#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:mco-core="urn:mpeg:mpeg21:mco:core:2012#"
  xmlns:mvco="http://purl.oclc.org/NET/mvco.owl#">
  <Ontology rdf:about="urn:mpeg:mpeg21:mco:examples">
    <imports rdf:resource="urn:mpeg:mpeg21:mco:ipre:2012"/>
  </Ontology>

  <!-- urn:mpeg:mpeg21:mco:examples#x854 -->
  <NamedIndividual rdf:about="&mcoex;x854">
    <rdf:type rdf:resource="&mvco;IPEntity"/>
    <dc:title rdf:datatype="&xsd:string">In the middle of nothing</dc:title>
    <dc:identifier rdf:datatype="&xsd:string">isan:ABC123YZ</dc:identifier>
  </NamedIndividual>
</rdf:RDF>
```

Replace subclause 7.3.3 with the following

7.3.3 Example

The example shown in Figure 15 depicts a more complex situation, derived from a real contract, where the permission to make a broadcast is given subject to certain restrictions, spatial, temporal and of policy of access.

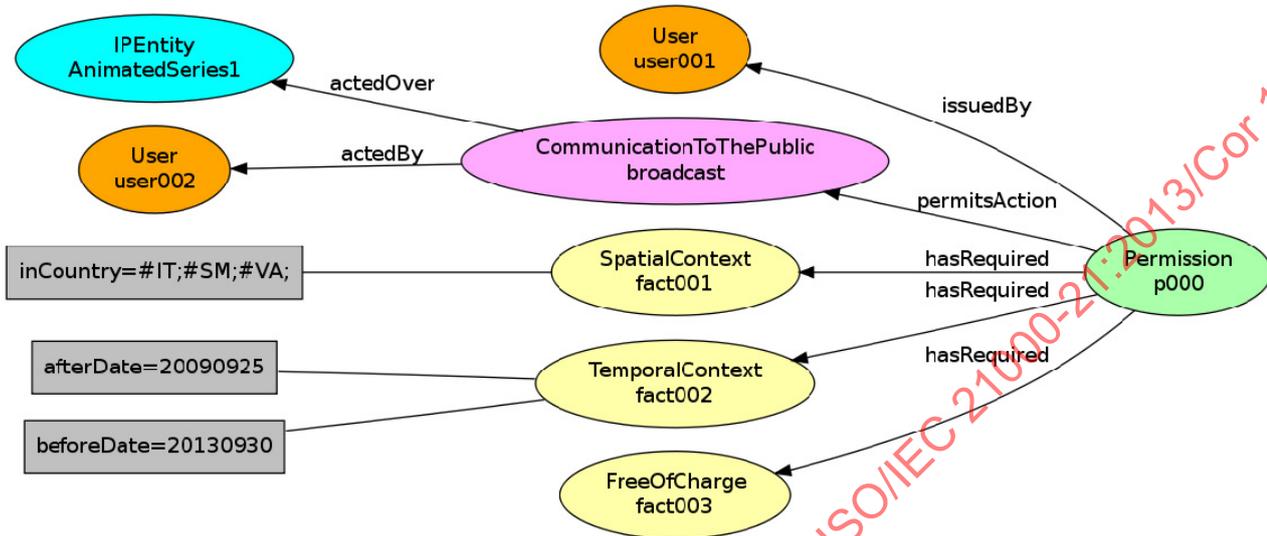


Figure 15 — Expression of a permission, extracted from a real contract

The expression as RDF is given in the following fragment:

```

<!--entity individuals defined in the examples -->
<!ENTITY mcoex "urn:mpeg:mpeg21:mco:examples#">

<mvco:Permission rdf:about="&mcoex;p000">
  <mvco:permitsAction rdf:resource="&mcoex;broadcast"/>
  <mvco:issuedBy rdf:resource="&mcoex;user001"/>
  <mvco:hasRequired rdf:resource="&mcoex;fact001"/>
  <mvco:hasRequired rdf:resource="&mcoex;fact002"/>
  <mvco:hasRequired rdf:resource="&mcoex;fact003"/>
</mvco:Permission>
<mco-ipre:CommunicationToThePublic rdf:about="&mcoex;broadcast">
  <mvco:actedBy rdf:resource="&mcoex;user002"/>
  <mvco:actedOver rdf:resource="&mcoex;AnimatedSeries1"/>
</mco-ipre:CommunicationToThePublic>
<mvco:User rdf:about="&mcoex;Licensor"/>
<mvco:User rdf:about="&mcoex;Licensee"/>
<mvco:IPEntity rdf:about="&mcoex;AnimatedSeries1"/>
  <mco-ipre:SpatialContext rdf:about=="&mcoex;fact001">
    <mco-ipre:inCountry>#IT;#VA;#SM;</mco-ipre:inCountry>
  </mco-ipre:SpatialContext>
  <mco-ipre:TemporalContext rdf:about=="&mcoex;fact002">
    <mco-ipre:afterDate>20090925</mco-ipre:afterDate>
    <mco-ipre:beforeDate>20130930</mco-ipre:beforeDate>
  </mco-ipre:TemporalContext>
  <mco-ipre:FreeOfCharge rdf:about=="&mcoex;fact003"/>

```

More comprehensive examples are given in Annex B.

In subclause 8.1.2 Classes, replace the first line:

Classes with no other defined parent classes:  
with:

Classes with no other defined parent classes:

- `mco-core:Party` – an individual belongs to this class if it belongs to either `mvco>User` or to `mco-core:Organization`. The class `mco-core:Party` is equivalent to the union of the classes `mvco>User` and `mco-core:Organization`.

Replace subclause 8.1.3 with the following:

### 8.1.3 Object properties

The following object properties are defined:

- `mco-core:hasRequired` – relation used to extend the domain of `mvco:hasRequired`. The domain is `mco-core:DeonticExpression` and the range is `mvco:Fact`.
- `mco-core:actedBy` – relation used to extend the range of `mvco:actedBy`. The domain is `mvco>Action` and the range is `mco-core:Party`.
- `mco-core:actedOver` – relation used to extend the range of `mvco:actedOver`. The domain is `mvco>Action` and the range is the union of `mvco:IPEntity` and `mco-core:Service`.
- `mco-core:issuedBy` – relation used to extend both the domain and range of `mvco:issuedBy`. The domain is `mco-core:DeonticExpression` and the range is the union of `mco-core:Party`.
- `mco-core:hasParty` – relation used to express a party in a contract. The domain is `mco-core:Contract` and the range is `mco-core:Party`.
- `mco-core:isSignedBy` – relation used to identify the signatory of a contract when different from a party. The domain is `mco-core:Contract` and the range is `mvco>User`.
- `mco-core:hasSignatory` – for modeling the identification of the signatory on behalf of a party. The domain is `mco-core:Organization` and the range is `mvco>User`.
- `mco-core:issuedIn` – for modeling the identification of the contract in which the deontic expression is issued, in any context where information about multiple contracts are collected. The domain is `mco-core:DeonticExpression` and the range is `mco-core:Contract`.
- `mco-core:implements` – for modeling the reference from a deontic expression to narrative contract excerpts of which it makes the operative part. The domain is `mco-core:DeonticExpression` and the range is `mco-core:TextualClause`.
- `mco-core:contractProperty` – parent property of all the properties attributable to `mco-core:Contract` as both domain and range, for modeling relationships between contracts. SubClasses of `mco-core:contractProperty` are:
  - `mco-core:cancels`, the parties agree to cancel all the effects of the referenced contract
  - `mco-core:isAmendmentOf`, the referenced contract is partially modified by the new agreement.

- `mco-core:prevailsOver`, the referenced contract is generally still valid, but in case of conflict the terms of the new one prevail.
- `mco-core:supersedes`, the referenced contract has to be considered terminated by the new agreement which totally replaces it.
- `mco-core:hasVCard` – for modeling the address information of the contract parties and signatories. The domain is `mco-core:Party` and the range: `http://www.w3.org/2006/vcard/ns#VCard`.
- `mco-core:forbidsAction` – relation used to express the actions that are forbidden. The domain is `mco-core:Prohibition` and the range is `mvco:Action`.
- `mco-core:obligatesAction` – relation used to express the actions that are obligated to be executed. The domain is `mco-core:Obligation` and the range is `mvco:Action`.
- `mco-core:hasFact` – relation between a `FactComposition` and each of its component `Facts`.
- `mco-core:makesTrue` – relation used to express the dependency between the truth of a `Fact` and the status of a related action. The domain is `mvco:Action` and the range is `mco-core:ActionRelatedFact`.
- `mco-core:providesTo` – relation used to express the beneficiary of a `mco-core:ProvideMaterial` action. The domain is `mco-core:ProvideMaterial` and the range is `mco-core:Party`.

In subclause 8.1.4 *Datatype properties*, replace the text:

- `mco-core:Address` – The domain is `mco-core:Organization`, `mvco:User`, for permitting a simple mechanism of providing address information as plain text.

with:

- `mco-core:Address` – The domain is `mco-core:Party`, for permitting a simple mechanism of providing address information as plain text.

In subclause 8.2.4.1 *Subproperties of factProperty*, replace the text:

- `mco-ipre:hasValidity` – for attributing the period of validity of the context expressed by the fact. When domain is `mco-ipre:Limited`, it attributes the how long the end user can access the content after having got access. When domain is `mco-ipre:Run`, it attributes the period during which an unlimited or specified number of repetitions have to be considered as a single run. When domain is `mco-core:ActionRelatedFact`, it attributes how long the context of the fact has to be considered valid, i.e. true.

with:

- `mco-ipre:hasValidity` – for attributing the period of validity of the context expressed by the fact. When domain is `mco-ipre:Limited`, it attributes how long the end user can access the content after having got access. When domain is `mco-ipre:Run`, it attributes the period during which an unlimited or specified number of repetitions have to be considered as a single run. When domain is `mco-core:ActionRelatedFact`, it attributes how long the context of the fact has to be considered valid, i.e. true.