

**BÚSQUEDA SEMÁNTICA EN UN REPOSITORIO DE PROCESOS
DE NEGOCIO**



**DANIEL FELIPE RIVAS BURBANO
DAVID SANTIAGO CORCHUELO CASTRO**

**ANEXO No 5.
ONTOLOGIA DE PATRONES DE FLUJO DE CONTROL**

Director: Dr. JUAN CARLOS CORRALES

**UNIVERSIDAD DEL CAUCA
FACULTAD DE INGENIERÍA ELECTRÓNICA Y TELECOMUNICACIONES
DEPARTAMENTO DE TELEMÁTICA
POPAYÁN
2010**

ANEXO No 5. ONTOLOGIA DE PATRONES DE FLUJO DE CONTROL

La Figura 1 muestra la representación gráfica de la ontología de patrones básicos de flujo de control para BPMO, donde los nodos representan conceptos o instancias y las aristas las relaciones de súper conceptos y subconceptos existentes entre los conceptos de la ontología.

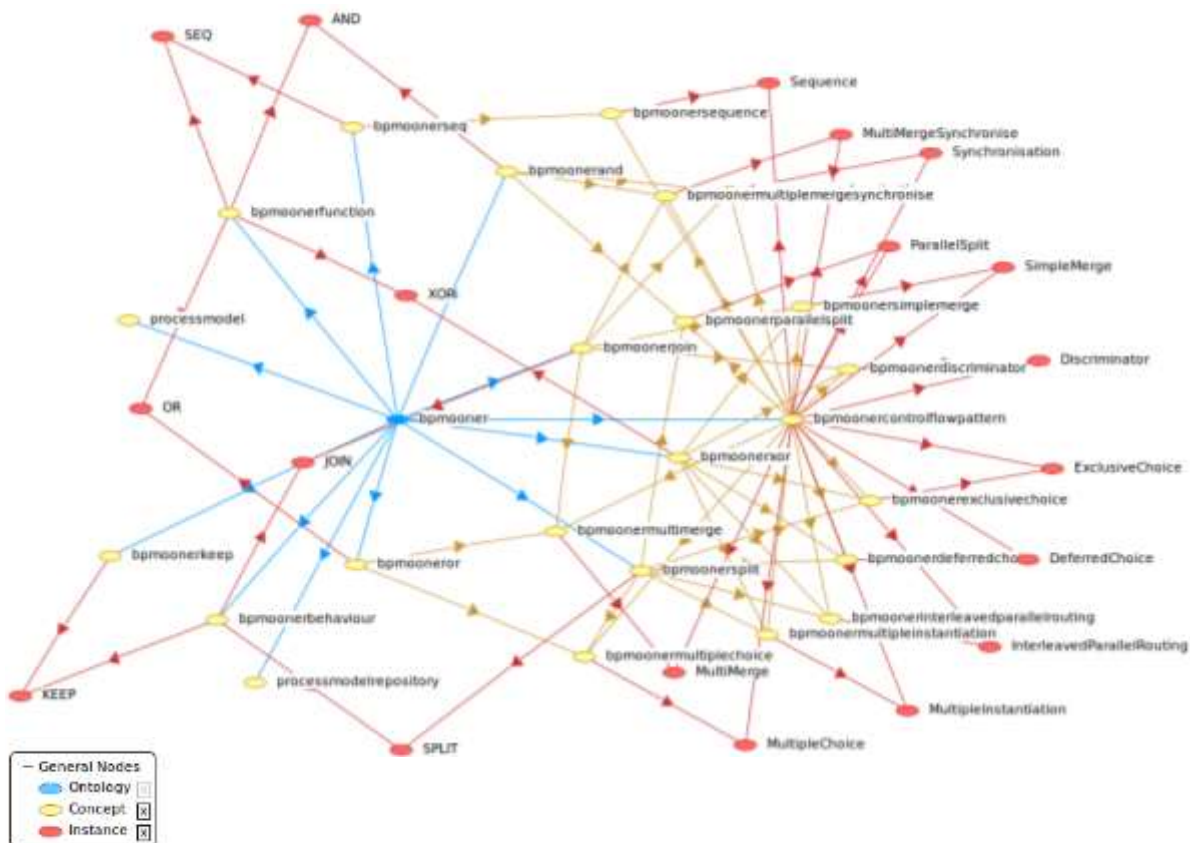


Figura 1. Ontología de patrones de flujo de control básicos

A continuación se presenta el contenido en formato WSMML de la ontología de patrones básicos de flujo de control de los procesos de negocio modelados en la notación BPMO 1.4. (Figura 2) ilustrada en la figura anterior.

```

wsmmlVariant _ "http://www.wsmo.org/wsmml/wsmml-syntax/wsmml-flight"
namespace { _ "https://sites.google.com/site/bpmooner/"
'
  wsmmostudio _ "http://www.wsmmostudio.org#",
  unicauca _ "http://www.unicauca.edu.co#",
  git _ "http://www.git.unicauca.edu.co#" }

ontology bpmooner
  nonFunctionalProperties
    wsmmostudio#version hasValue "0.7.3.2"
    creator hasValue {"David Santiago Corchuelo Castro", "Daniel Felipe Rivas
Burbano"}
    creation_date hasValue "20/10/2010"
    email hasValue {"bpmoonergmail.com", "dfriivas1@gmail.com",
"dacorchuelo@gmail.com"}
    description hasValue "Ontology of relations of Control Flow Patterns (composition,
specialization) based on BPMO v2.0.1 and YAWL Control Flow Patterns"
    language hasValue "es-CO"
    unicauca#location hasValue "Popayan-Cauca-Colombia"
    unicauca#title hasValue "Universidad del Cauca"
    subject hasValue "Semantic Business Process Management"
    title hasValue "BPMOONER Ontology"
    version hasValue "1.0.0"
    author hasValue "https://sites.google.com/site/bpmooner/"
    git#title hasValue "Grupo de Ingenieria Telematica"
    country hasValue "Colombia"
  endNonFunctionalProperties

  importsOntology
    _ "http://ip-super.org/ontologies/process/bpmo/v2.0.1#bpmo"

concept processmodelrepository subConceptOf _ "http://ip-
super.org/ontologies/process/bpmo/v2.0.1#BusinessResource"
  nonFunctionalProperties
    description hasValue "location for process model storage"
  endNonFunctionalProperties

concept processmodel subConceptOf _ "http://ip-
super.org/ontologies/process/bpmo/v2.0.1#Process"
  nonFunctionalProperties
    description hasValue "An organized arrangement of systems concepts and principles
that portray the behavior of a system through time"
  endNonFunctionalProperties

concept bpmoonercontrolflowpattern
  nonFunctionalProperties
    description hasValue "open standards directly observable categorising recurring
problems and solutions in a particular domain"
  endNonFunctionalProperties
  hasBehaviour ofType bpmoonerbehaviour
  hasFunction ofType bpmoonerfunction
  isSpecializedOf ofType bpmoonercontrolflowpattern
  composeTo ofType bpmoonercontrolflowpattern

concept bpmoonersplit
  nonFunctionalProperties
    description hasValue "split the control flow in two or more flows"
  endNonFunctionalProperties

concept bpmoonerjoin
  nonFunctionalProperties
    description hasValue "join in a common flow two or more incoming flows"
  endNonFunctionalProperties

```

```

concept bpmoonerkeep
  nonFunctionalProperties
    description hasValue "control flow goes on"
  endNonFunctionalProperties

concept bpmoonerseq
  nonFunctionalProperties
    description hasValue "sequential flow of workflow elements"
  endNonFunctionalProperties

concept bpmoonerand
  nonFunctionalProperties
    description hasValue "results are obtained simultaneously"
  endNonFunctionalProperties

concept bpmooneror
  nonFunctionalProperties
    description hasValue "results are obtained in simultaneously or partially"
  endNonFunctionalProperties

concept bpmoonerxor
  nonFunctionalProperties
    description hasValue "results are obtained exclusively partial"
  endNonFunctionalProperties

concept bpmoonersequence subConceptOf { bpmoonercontrolflowpattern, bpmoonerseq}
  nonFunctionalProperties
    description hasValue "It is used to construct a series of consecutive activities
which execute in turn one after the other"
  endNonFunctionalProperties

concept bpmoonerdeferredchoice subConceptOf { bpmoonercontrolflowpattern, bpmoonersplit,
bpmoonerxor}
  nonFunctionalProperties
    description hasValue "Provides the ability to defer the moment of choice in a
process"
  endNonFunctionalProperties

concept bpmoonerexclusivechoice subConceptOf { bpmoonercontrolflowpattern, bpmoonersplit,
bpmoonerxor}
  nonFunctionalProperties
    description hasValue "Allows the thread of control to be directed to a specific
activity depending on the outcome of a preceding activity"
  endNonFunctionalProperties

concept bpmoonermultiplechoice subConceptOf { bpmoonercontrolflowpattern, bpmooneror,
bpmoonersplit}
  nonFunctionalProperties
    description hasValue "Pattern provides the ability for the thread of execution to
be diverged into several concurrent threads on a selective basis"
  endNonFunctionalProperties

concept bpmoonermultipleinstantiation subConceptOf { bpmoonercontrolflowpattern,
bpmoonersplit, bpmoonerxor}
  nonFunctionalProperties
    description hasValue "Offers the possibility of relaxing the strict ordering that
a process usually imposes over a set of activities"
  endNonFunctionalProperties

concept bpmoonersynchronisation subConceptOf { bpmoonercontrolflowpattern, bpmoonerand,
bpmoonerjoin}
  nonFunctionalProperties
    description hasValue "Provides a means of reconverging the execution threads of
two or more parallel branches"
  endNonFunctionalProperties

concept bpmoonersimplemerge subConceptOf { bpmoonercontrolflowpattern, bpmoonerxor,
bpmoonerjoin}
  nonFunctionalProperties
    description hasValue "Provides a means of merging two or more distinct branches
without synchronizing them"

```

```

    endNonFunctionalProperties

concept bpmoonerparallelsplit subConceptOf { bpmoonercontrolflowpattern, bpmoonerand,
bpmoonersplit}
    nonFunctionalProperties
        description hasValue "Allows a single thread of execution to be split into two or
more branches which can execute activities concurrently"
    endNonFunctionalProperties

concept bpmoonerdiscriminator subConceptOf { bpmoonercontrolflowpattern, bpmoonerxor,
bpmoonerjoin}
    nonFunctionalProperties
        description hasValue "Provides a mechanism for progressing the execution of a
process once the first of a series of concurrent activities has completed"
    endNonFunctionalProperties

concept bpmoonerinterleavedparallelrouting subConceptOf { bpmoonercontrolflowpattern,
bpmoonersplit, bpmoonerxor}
    nonFunctionalProperties
        description hasValue "Offers the possibility of relaxing the strict ordering that
a process usually imposes over a set of activities"
    endNonFunctionalProperties

concept bpmoonermultimerge subConceptOf { bpmoonercontrolflowpattern, bpmoonerjoin,
bpmooneror}
    nonFunctionalProperties
        description hasValue "Provides a means of merging distinct branches in a process
into a single branch"
    endNonFunctionalProperties

concept bpmoonermultiplemergesynchronise subConceptOf { bpmoonercontrolflowpattern,
bpmoonerand, bpmoonerjoin}
    nonFunctionalProperties
        description hasValue "Provides a means of merging the branches resulting from a
specific Multi-Choice or OR-split construct earlier in a workflow process into a single
branch"
    endNonFunctionalProperties

concept bpmoonerbehaviour
    nonFunctionalProperties
        description hasValue "can split or merge or keep the control flow"
    endNonFunctionalProperties

concept bpmoonerfunction
    nonFunctionalProperties
        description hasValue "can be simultaneous (AND) or partial and simultaneous (OR)
or exclusive (XOR)"
    endNonFunctionalProperties

instance SEQ memberOf { bpmoonerseq, bpmoonerfunction}

instance AND memberOf { bpmoonerand, bpmoonerfunction}

instance OR memberOf { bpmooneror, bpmoonerfunction}

instance XOR memberOf { bpmoonerxor, bpmoonerfunction}

instance JOIN memberOf { bpmoonerjoin, bpmoonerbehaviour}

instance SPLIT memberOf { bpmoonersplit, bpmoonerbehaviour}

instance KEEP memberOf { bpmoonerkeep, bpmoonerbehaviour}

instance Sequence memberOf { bpmoonersequence, bpmoonercontrolflowpattern}
    hasBehaviour hasValue KEEP
    hasFunction hasValue SEQ

instance DeferredChoice memberOf { bpmoonerdeferredchoice, bpmoonercontrolflowpattern}
    hasBehaviour hasValue SPLIT
    hasFunction hasValue XOR

```

```

instance ExclusiveChoice memberOf { bpmoonerexclusivechoice, bpmoonercontrolflowpattern}
  hasBehaviour hasValue SPLIT
  hasFunction hasValue XOR
  isSpecializedOf hasValue {MultipleChoice, ParallelSplit }
  composeTo hasValue MultipleChoice

instance MultipleChoice memberOf { bpmoonermultiplechoice, bpmoonercontrolflowpattern}
  hasBehaviour hasValue SPLIT
  hasFunction hasValue OR
  isSpecializedOf hasValue ParallelSplit

instance MultipleInstantiation memberOf { bpmoonermultipleinstantiation,
bpmoonercontrolflowpattern}
  hasBehaviour hasValue SPLIT
  hasFunction hasValue XOR

instance Synchronisation memberOf { bpmoonersynchronisation, bpmoonercontrolflowpattern}
  hasBehaviour hasValue JOIN
  hasFunction hasValue AND

instance SimpleMerge memberOf { bpmoonersimplemerge, bpmoonercontrolflowpattern}
  hasBehaviour hasValue JOIN
  hasFunction hasValue XOR
  isSpecializedOf hasValue MultiMerge

instance ParallelSplit memberOf { bpmoonerparallelsplit, bpmoonercontrolflowpattern}
  hasBehaviour hasValue SPLIT
  hasFunction hasValue AND
  composeTo hasValue MultipleChoice

instance Discriminator memberOf { bpmoonerdiscriminator, bpmoonercontrolflowpattern}
  hasBehaviour hasValue JOIN
  hasFunction hasValue XOR

instance InterleavedParallelRouting memberOf { bpmoonerinterleavedparallelrouting,
bpmoonercontrolflowpattern}
  hasBehaviour hasValue SPLIT
  hasFunction hasValue XOR

instance MultiMerge memberOf { bpmoonermultimerge, bpmoonercontrolflowpattern}
  hasBehaviour hasValue JOIN
  hasFunction hasValue OR

instance MultiMergeSynchronise memberOf { bpmoonermultiplemergesynchronise,
bpmoonercontrolflowpattern}
  hasBehaviour hasValue JOIN
  hasFunction hasValue AND

```

Figura 2. Contenido del archivo de la Ontología de patrones: “bpmooner-1.0.0.wsml”