

A Mid-Level Ontology for the Performing Arts (MiLOPA)

W3C Community Group Note Technical Report

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Editors:

Daniela Rosu
Mariel Marshall

Contributors:

Contributions have been made by members of the PAIR-CG community group, including:
[Please add your name here when you contribute]:

Marie-Pier Blain
Sarah Bay-Cheng
Tyler Graham
William Wilson Jones
Frédéric Julien
Tammy Lee
Caitlin Troughton

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Abstract

MiLOPA is an ontology for representing knowledge in the performing arts domain.

The namespace for MiLOPA terms is:

The suggested prefix for the MiLOPA namespace is: ulopa

The MiLOPA ontology is available here

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1. Summary

1.1 Background

“Live performance presents unique ontological challenges. We have not truly experienced a play unless we have seen a performance of it, and yet we cannot point to any particular performance and correctly say, “There is the play,” without having excluded something central. (Doty 2013)”¹

The exchange of information in the performing arts domain is permeated by complex concepts which contain a great deal of ambiguity. Reducing or eliminating the ambiguity in communication has the potential to effect significant positive changes in various applications such as search, discovery, the archiving of works, assessing the social impact of the arts, and the research associated with it, as well as enabling data analytics and accountability.

Performing arts stakeholders should be able to employ representational frameworks that enable them to describe and share their information effectively. This will not only improve human-centred communication but also technology-based interactions because software agents need computer-interpretable descriptions of what the information represents (its meaning) in order to make effective use of the information. As such, an important goal for a performing arts representational framework is to establish a framework within which these descriptions can be made and shared.

The representational framework put forward in this document, a Mid-Level Ontology for the Performing Arts (MiLOPA), was developed in order to help improve communication exchanges. MiLOPA's contribution is providing clear, formal definitions for complex concepts and properties. The representational framework is made available using the formal structuring mechanisms of the Ontology Web Language (OWL), which provides an appropriate, Web-compatible approach.

¹ Doty, Colin. “The Difficulty of An Ontology of Live Performance”. Journal Issue: InterActions: UCLA Journal of Education and Information Studies, 9(1). 2013

We will sometimes refer to MiLOPA as a *language* for describing performing arts knowledge, reflecting the fact that it provides a standard vocabulary that can be used (together with the other aspects of the OWL) to create descriptions.

In responding to the challenge of representing knowledge in the performing arts domain, we must ask ourselves **how well existing (formal and informal) frameworks are working to represent important concepts in the domain and how new modes of thinking may address existing gaps.**

In what follows, we will motivate the framework with sample tasks that it is designed to support. The ontology is an evolving thing that continues to make connections to other development efforts, such as those building ontologies of time, schedules, resources, etc.

The intent of the PAIR-CG is not to introduce a tool to enforce rigid linguistic constraints in everyday communication in the performing arts. MiLOPA is intended as a framework that can be used to reduce ambiguity in communication and which can be computer-interpretable. It is for this reason that new or modified words have been used to name classes and properties. This was done to reduce the friction around word choice.

For example, in the performing arts, people often use the word ‘production’ with various meanings, and it can be a loaded term. Take for example:

1. “Did you see that amazing *production* of Controlled Damage by Andrea Scott?”
2. What *production* elements (costumes, set, props) did you like most?

The word *production* requires disambiguation in these two instances. Rather than using a different word in each case, MiLOPA has two different classes that can be used to disambiguate the two meanings. Using MiLOPA to achieve this, the two usages could be clarified like so:

1. Did you see that amazing *production* [pair-cg: PERFORMANCE_WORK] of Controlled Damage by Andrea Scott?”
2. What *production* elements [pair-cg TANGIBLE_REALIZATION_ELEMENT] did you like most?

The MiLOPA ontology is not provided as an extensive resource of terms that can be used for all possible instances. Rather it has been constructed as a selection of mid-level concepts chosen for their potential as a foundation or base that future work can build off of. This is why common concepts such as a show’s ‘title’ or ‘door time’ are not present in this ontology. Instead, this ontology has focused on disambiguating concepts surrounding *that which is performed from the performance itself*. Entire branches, or nodes as they are called in this work, have been indicated for future development.

Additionally, there are many contexts for creating an ontology. This ontology was created specifically for the context of sharing information in the performing arts domain. There are many use cases for the sharing of information, such as promoting a show on a website, archiving a show in a repository, or having a show appear in a search engine query. The intent of MiLOPA is to facilitate the management of information, including publishing, storing and retrieval.

Using MiLOPA

MiLOPA puts forward names for classes as well as definitions.

The framework can be used in a confirmant capacity, or not. For example, an individual may choose to use the term 'production' and point to MiLOPA's class of PERFORMANCE_WORK for the definition. This would be an example of a non confirmant use of the ontology. If the person used the term 'PERFORMANCE_WORK' in their data model and pointed to MiLOPA's class 'PERFORMANCE_WORK', here we would have a confirmant case.

Additionally, the ontology can be used as a data model, or as a backbone for a data model to be built off of.

1.2. Definitions

The following terms and phrases are used throughout this document in the sense listed below. Readers will most likely not fully understand these definitions without also reading through the remainder of the PRISM documentation package.

Authority File	One of the forms of a controlled vocabulary, in which a list of uniquely identified entities, such as companies, authors, countries, employees, or customers, is maintained over time.
Content	Content, as it is used in the PRISM Specification, is a non-normative term assumed to be a resource or a collection of resources.
Content Provider	A publisher, business, portal site, person or entity making content available in any medium.
Controlled Vocabulary	A list of uniquely identified terms with known meaning. The list itself has a defined maintenance procedure and restricted update access. For example, an employee database is one type of controlled vocabulary. The list of terms (staff names) is uniquely identified (employee number) and is maintained by a known procedure and staff (the HR department). There are two major types of controlled vocabularies - authority files and taxonomies.
Metadata	Information about a resource. In this specification, metadata is expressed as one or more properties.

Property	A field with a defined meaning used to describe a resource. A property plus the value of that property for a specific resource is a statement about that resource. [W3C-RDF]
Resource	Text, graphics, sound, video or anything else that can be identified with a URI or other identification scheme. The PRISM Specification uses this term because it is not used in casual writing, so it can be used unambiguously in the PRISM Specification.
Statement	An assertion about a resource. Typically, statements assert that relations such as "part of" exist between resources, or that a resource has a particular value of a property, such as a "format" of "text/html".
Taxonomy	One of the forms of a controlled vocabulary, in which the uniquely identified concepts are arranged in a hierarchy that represents the relations between more specific and more general concepts.

1.3 Notation and Namespaces

Classes and properties from the [RDF](#) are denoted in this specification using [Compact URIs](#) [\[curie\]](#). The namespace for all classes and properties in MiLOPA is [...]

The MiLOPA extends and uses terms from other vocabularies. The table below indicates the full list of namespaces and prefixes used in this document.

Prefix	Namespace	Reference
dct	http://purl.org/dc/terms/	[DC11]
rdf	http://www.w3.org/1999/02/22-rdf-syntax-ns#	[RDF-CONCEPTS]
rdfs	http://www.w3.org/2000/01/rdf-schema#	[RDF-SCHEMA]
org	http://www.w3.org/ns/org#	[org]
owl	http://www.w3.org/2002/07/owl#	[OWL2-PRIMER]

skos	http://www.w3.org/2004/02/skos/core#	[SKOS-REFERENCE]
time	http://www.w3.org/2006/time#	[OWL-TIME]

Conformance (Normative)

This section describes conformance conditions for MILOPA-conforming documents.

The concept specifications include:

- a canonical name for the element
- explanatory glosses for the name in various languages
- alternative names in other languages
- equivalents in other frameworks
- a summary description of the meanings and usages intended for the element
- information about the element and attribute classes to which the element belongs
- information about the element's content model
- formal specifications for any constraints additional to those expressed by the content model
- a list of specifications for any attributes defined as local to the element rather than being inherited from an attribute class
- formal specifications for the recommended processing model applicable to the element
- annotated examples of usage
- additional commentary or usage notes

2. Vocabulary specification - Core Terminology

2.1 Classes

2.1.1 Activity

CQs:

- What were the activities of the development phase for the show?
- What type of creation activity are you doing?

We are reusing the concept of **activity** as defined in the Process Specification Language (PSL).

rdf:Class	:activity
IRI	
Definition	A repeatable pattern of behaviour.
rdfs:subClassOf	

2.1.2 Activity occurrence

rdf:Class	:activity_occurrence
IRI	
Definition	A concrete instantiation (a manifestation) of an <i>activity</i> .
rdfs: subClassOf	

2.1.3 Class: complex_activity

The artistic process, for example, contains multiple subactivities, therefore it is a complex activity.

rdfs:Class	:complex_activity
IRI	
Definition	An activity that includes two or more subactivities.
rdfs:subClassOf	
skos:prefLabel	
Usage note	

Class: artistic_process

Internal Juncture - will be expanded in future work.

Relevant CQs:

1. What is your artistic process?
2. Which phase of the process are you currently in?
3. When will the process of making and presenting the show be done?

Synonyms: creative_process

Definition: A type of COMPLEX_ACTIVITY that involves a unique combination of vision, creativity, intuition, inspiration and collaboration balanced with craft, technique, accountability, discipline, and use of time and resources. Cognitive and physical actions are present.

The ARTISTIC_PROCESS may include activities such as a DEVELOPMENT_PHASE and one or more REALIZATION_ACTIVITY.

rdfs:Class	pair_cg:artistic_process
rdfs:subClassOf	
skos:prefLabel	
Usage note	

2.2 Properties

2.2.1 *occurrence of*

The relationship between *activities* and *activity occurrences* is captured by the **occurrence_of** relation. Any activity occurrence corresponds to a unique activity. (Activities may have multiple occurrences, or there may exist activities which never occur.)

Property	:occurrence_of
----------	----------------

IRI	
Definition	Supports the association of an activity occurrence to an activity.
Instance of	owl:ObjectProperty
Domain	milopa: activity_occurrence
Range	milopa: activity

Related definitions:

“An ACTIVITY describes something that occurs in the domain. An ACTIVITY may be further defined by (decomposed into) SUBACTIVITIES. An ACTIVITY may have precondition and/or effect STATE. An ACTIVITY may be enabled by or cause some STATE. An enabling of causing STATE is a generalization of a precondition/effect; an ACTIVITY is enabled by or causes some State if it has a subactivity with a precondition or effect (respectively) of that State. In other words, the state may not be required directly before, or cause directly after the activity, but by some more specialized sub-activity. An Activity occurs at some point in time and space. An Activity takes place during some interval, and so has some duration. An Activity may have some Manifestations that participate in it.”

Source:

1. <https://enterpriseintegrationlab.github.io/icity/Activity/doc/index-en.html#Activity>
2. http://ontologydesignpatterns.org/wiki/Submissions:An_Ontology_Design_Pattern_for_Activity_Reasoning

Class: realization_activity

Internal Juncture - will be expanded in future work.

Synonyms: transmitting, executing, performing

Relevant CQs:

- When will the show be performed?
- When is it playing?

Definition: A type of COMPLEX_ACTIVITY in which a PERFORMANCE_WORK is executed, in whole or in part.

Example: Whenever a performer performs, be that in the rehearsal room or on stage for a live audience, they are engaged in a REALIZATION_ACTIVITY.

Subclass Examples: REALIZATION_ACTIVITIES can be categorized based on their properties, including the agents involved, the context of the activity (e.g the circumstances that indicate the completeness, purpose and setting for the REALIZATION_ACTIVITY to occur such as a rehearsal, workshop performance, or script reading), and also the portion of the PERFORMANCE_WORK being executed (e.g a first act performance, a single song, a monologue, a full three act play).

rdfs:Class	Pair_cg:realization_activity
rdfs:subClassOf	
skos:prefLabel	realization_activity
Usage note	

Class: phase

Relevant CQs:

- Which phase is the project in?

Definition: a distinct period or stage of the ARTISTIC_PROCESS. A PHASE is a type of COMPLEX_ACTIVITY.

rdfs:Class	pair_cg:phase
rdfs:subClassOf	
skos:prefLabel	phase
Usage note	

Relationship label: has_phase

Definition: The distinct relationship between the ARTISTIC_PROCESS and a distinct period or stage within it known as a PHASE.

rdf:Property	pair_cg:has_phase
--------------	-------------------

rdfs:domain	pair_cg:
rdfs:range	pair_cg:
skos:prefLabel	has_phase
Usage note	

Class: development_phase

Internal Juncture - will be expanded in future work.

Relevant CQs:

- When will the show go into development?
- How long did the show take to be created?
- Who was involved in conceptualizing and developing the show?
- What phase of creation/development are you applying for funding?
- Which phase of development is the project in?
- What part of creation involves rehearsals?

Synonyms: generative_phase

Definition: A type of PHASE in which the ARTISTIC_PROCESS_TEAM iteratively creates, mixes, models, workshops, adapts, builds, transforms or otherwise generates components of the PERFORMANCE_WORK.

Subclass Examples: The composition of a DEVELOPMENT_PHASE is not set by the MiLOPA framework, rather it can vary based on the wishes of the ARTISTIC_PROCESS_TEAM who are free to ascribe to their DEVELOPMENT_PHASE sub phases which may include:

- Conceptualization (phase)
- Ideation (phase)
- Generation (phase)
- Creation (phase)
- Development (phase)
- Refinement (phase)
- Rehearsal (phase)
- Realization (phase)

rdfs:Class	pair_cg:development_phase
rdfs:subClassOf	

skos:prefLabel	development_phase
Usage note	

Class part

(part will be pulled in from existing ontology)

Definition: An individual element that is a segment of something.

rdf:Property	pair_cg:part
rdfs:domain	pair_cg:
rdfs:range	
skos:prefLabel	part
Usage note	

Relationship label: has_part

Internal Juncture - related concepts and relationships will be developed by PAIR-CG members in future work.

Definition: Belonging to or connected with another element.

The ARTISTIC_PROCESS, for example, has many activities that belong to it. It HAS_PART → ACTIVITY. Additionally, an element of CREATIVE_MATERIAL such as a script may have specific parts belonging to it ie. act 1, act 2.

(has_part will be pulled in from existing ontology)

rdf:Property	pair_cg:has_part
rdfs:domain	pair_cg:artistic_process
rdfs:range	pair_cg: activity (or part)

skos:prefLabel	has_part
Usage note	

Class: performance_part

Relevant CQs:

- What character did Jully Black play in *Caroline, or Change*?
- Who is playing the role of Caroline Thibodeaux in *Caroline, or Change*?
- Which part is the flautist playing?
- What part is being sung by the soprano?
- What parts will the dancer perform?
- How many parts will that member of the ensemble take on?

Synonyms: character role, character, portrayal, depiction

Definition: A type of PART designed to be performed. This may include a character, portrayal, melody or segment which combined with others, makes up the whole.

In musical composition, a PERFORMANCE_PART is often a single melody of *music* for a particular instrument within a larger *musical* composition. In theatre, a PERFORMANCE_PART is often a specific set of actions, movement and/or spoken or sung words, which may be played by one performer or many.

Example: each character in *Peter and the Wolf* is represented by a different instrument PERFORMANCE_PART. The String segment, for example, is a specific melody associated with the character of Peter. A PERFORMANCE_PART exists for the strings.

rdfs:Class	Pair_cg:performance_part
rdfs:subClassOf	
skos:prefLabel	
Usage note	

Subclasses to be added:

CharacterPart, VocalPart, DancePart, SuperPart, and InstrumentalPart" subclasses.

Relationship label: has_performance_part

rdf:Property	pair_cg:has_performance_part
rdfs:domain	pair_cg:creative_material
rdfs:range	pair_cg:part
skos:prefLabel	has_performance_part
Usage note	

Class: activity_context

Internal Juncture - will be expanded in future work.

Relevant CQs:

- Is it a preview performance or a regular performance?
- Is the event a script reading or a full production?

Definition: The circumstances that indicate the completeness, fullness, purpose and setting for the REALIZATION_ACTIVITY to occur and which position it to be understood and assessed.

A workshop performance, for example, is a type of ACTIVITY_CONTEXT that indicates to attendees that the REALIZATION_ACTIVITY will include components still in development, and which may require audience attendance and feedback for further refinement. Similarly, a script reading is a type of REALIZATION_ACTIVITY where performers may be “on book” and reference or read from the script, where limited blocking or staging has been set, and where there are few to no design elements incorporated.

Examples of ACTIVITY_CONTEXT may include:

1. Workshop reading
2. Script reading
3. Alpha performance
4. Lab performance
5. In-development performance
6. Dress rehearsal
7. Preview performance
8. Community-night performance
9. Media night performance

rdfs:Class	Pair_cg:context
rdfs:subClassOf	
skos:prefLabel	context
Usage note	

Class: creative_material

Relevant CQs:

- What did you think of the *dialogue* in the show?
- How did you feel about the *music* of the performance?
- Where can I find an archival recording of that piece of *choreography*?

Definition: A component of content relating to or involving ideas generated during the ARTISTIC_PROCESS.

CREATIVE_MATERIAL may include:

- Dialogue to be performed
- A story to be told
- A lighting design to be executed
- Music to be performed
- Choreography to be performed
- Acting states, intentions and beats to be performed

CREATIVE_MATERIAL can exist with or without ever being realized.

An example of CREATIVE_MATERIAL is the specific movement sequence of a piece of choreography to be performed, or a chord progression of a piece of music to be played.

CREATIVE_MATERIAL may have ARTEFACTs associated with it such as a video recording, photographs, notations or a PERFORMANCE_TEXT (E.g. script or score), or may not have artefacts (E.g. they remain in a storyteller's mind).

How does CREATIVE_MATERIAL differ from an INTANGIBLE_REALIZATION_ELEMENT?

CREATIVE_MATERIAL is, for example, the content which is executed, whereas the INTANGIBLE_REALIZATION_ELEMENT is the particular way it is executed, such as it's tempo, volume or vocal delivery.

How does CREATIVE_MATERIAL relate to improvisation?

Prior to a concert there may be a score in some notation, which captures the notes to be performed. Before a musician's performance, we can talk about the CREATIVE_MATERIAL which will be performed. We can also talk about the PERFORMANCE_WORK, which captures the plan for how the conductor has rehearsed the musicians to perform, containing the tempo, dynamics and other colours for the performance. There are also choices about how the music should be performed being made, including tuning, instrumentation and more which is created during rehearsals, and will be embodied during the PERFORMANCE_REALIZATION. If the concert also includes a cadenza, and that cadenza is improvised by a soloist, that is CREATIVE_MATERIAL that is generated by the pianist at the time of realization. When the pianist improvises on stage, she is simultaneously creating music and performing it. As she creates, she earns the role of composer and has creative rights over that content.

How does CREATIVE_MATERIAL relate to stories or dances that are passed down through the generations, and not recorded?

When a storyteller hears a story, they can hold that story in their head. The ideas of the story itself are the CREATIVE_MATERIAL. The story does not need to be archived, documented or written down to exist. It exists in the storyteller's head. Once the storyteller begins to voice or perform the story for others, the CREATIVE_MATERIAL, along with the other elements (tangible and intangible) form the PERFORMANCE_WORK, and are realized as a PERFORMANCE_REALIZATION.

rdfs:Class	Pair_cg:creative_material
rdfs:subClassOf	
skos:prefLabel	
Usage note	

Class: performance_work

Internal Juncture - will be expanded in future work.

Relevant CQs:

- What performance_works were performed at the Summerworks Performance Festival?
- Is it a restaging of the same production, or a new version?
- What rating did the critic give the production?

Synonym: production_work, production

Definition: The PERFORMANCE_WORK is the conceptual plan for how elements (such as CREATIVE_MATERIAL, TANGIBLE_REALIZATION_ELEMENTS and/or INTANGIBLE_REALIZATION_ELEMENTS) will be executed in front of an audience.

The PERFORMANCE_WORK can exist whether or not it is ever realized for an audience. In the case of pure improvisation, it may also be concurrently created with a PERFORMANCE_REALIZATION. Generation and execution can happen concurrently.

The best example of an artefact of a PERFORMANCE_WORK is the stage manager's *prompt book*, which generally includes a written document containing lighting and sound cues, CREATIVE_MATERIAL_ARTEFACTS such as the script, or musical score, blocking directions, a list of props and costumes as well as other notes or directions for staging the work. The PERFORMANCE_WORK is the plan for how the elements will be executed. If that plan is written down or notated in some way, that documentation is an artefact of the PERFORMANCE_WORK.

rdfs:Class	pair_cg:performance_work
rdfs:subClassOf	pair_cg:Thing
skos:prefLabel	
Usage note	

Class: performance_realization

Relevant CQs:

1. Which performance of *Controlled Damage* did you see last week?
2. What did you think of the performance?
3. How did the performance make you feel?
4. Will the understudy be performing in tonight's show?
5. Which night of the production did the critic see and review?

Synonyms: performance, realization

Definition: The intangible result of a REALIZATION_ACTIVITY being executed, often referred to in the domain as the performance itself.

The result of the execution of a PERFORMANCE_WORK or portion of it, for or with an audience.

When we attend a play, or a concert, or musical, we perceive the PERFORMANCE_WORK being executed live before our eyes. This result of this execution is a PERFORMANCE_REALIZATION. For example, we may perceive CREATIVE_MATERIAL being performed such as musicians playing music, actors speaking lines of dialogue, dancers performing movements, acrobats executing acrobatics. We also perceive TANGIBLE_REALIZATION_ELEMENTS such as the stage, sets, lights, costumes, props, audience seating etc.(Doty, 2013)² and perceive the INTANGIBLE_REALIZATION_ELEMENTS such as the volume or pitch of an instrument or the timbre of an actor's voice. Together, these elements make up the PERFORMANCE_WORK, and when executed for an audience, the result is a PERFORMANCE_REALIZATION.

rdfs:Class	Pair_cg:performance_realization
rdfs:subClassOf	
skos:prefLabel	
Usage note	

Relationship label: is_execution_of

rdf:Property	pair_cg:is_execution_of
rdfs:domain	pair_cg:performance_realization
rdfs:range	pair_cg:performance_work
skos:prefLabel	is_execution_of
Usage note	

Relationship label: is_executed_in

rdf:Property	pair_cg:is_executed_in
rdfs:domain	pair_cg:performance_work
rdfs:range	pair_cg:performance_realization

² Doty, Colin. (2013). The Difficulty of An Ontology of Live Performance. InterActions: UCLA Journal of Education and Information Studies, 9(1), ISSN: 1548_3320. Retrieved from: <http://escholarship.org/uc/item/3jf4g75m>

skos:prefLabel	is_executed_in
Usage note	

Class: performance_work_schedule

Relevant CQs:

- When is the show playing?
- How long is the show run?
- What days are the show happening? Will it be playing on Tuesday?

Synonyms: run, show run, tour, production schedule

Definition: A sequence of PERFORMANCE_REALIZATIONS of the same PERFORMANCE_WORK. A run has a start date and an end date, but no further limitations. It may also have a schedule attached (schedule to be expanded in future work).

rdfs:Class	Pair_cg:performance_work_schedule
rdfs:subClassOf	
skos:prefLabel	performance_work_schedule
Usage note	

Relationship label: has_start_date

rdf:Property	pair_cg:has_start_date
rdfs:domain	pair_cg:
rdfs:range	pair_cg:date
skos:prefLabel	has_start_date
Usage note	

Domain?
Range?

Relationship label: has_end_date

rdf:Property	pair_cg:has_end_date
rdfs:domain	pair_cg:
rdfs:range	pair_cg:date
skos:prefLabel	has_end_date
Usage note	

Domain?
Range?

Class: date

rdfs:Class	date
rdfs:subClassOf	
skos:prefLabel	
Usage note	

Class: tangible_realization_element

Internal Juncture - will be expanded in future work.

Relevant CQs:

1. What did you think of the props and costumes?
2. How big was the scrim and back drop?
3. What lighting instruments are needed for this lighting design?

Definition: Physical objects capable of being perceived especially by the sense of touch intended to be used in a PERFORMANCE_REALIZATION.

Examples of TANGIBLE_REALIZATION_ELEMENTS include, but are not limited to:

- Props
- Lighting instruments
- Musical instruments
- Scenographic elements, set pieces
- Costumes
- Flooring (e.g a dance floor)

A lighting design which is to be lit and executed during a PERFORMANCE_REALIZATION is considered CREATIVE_MATERIAL, whereas the light fixtures are TANGIBLE_REALIZATION_ELEMENTS. A technical drawing, or lighting cue sheet which is a blueprint of the lightning design is an ARTEFACT of the CREATIVE_MATERIAL.

The CREATIVE_MATERIAL may have creative rights or licensing rights associated with it. For example, a lighting designer may receive a percentage of royalties for all PERFORMANCE_REALIZATIONS of a PERFORMANCE_WORK that use their lighting design.

rdfs:Class	Pair_cg:tangible_realization_element
rdfs:subClassOf	
skos:prefLabel	
Usage note	

Class: intangible_realization_element

Juncture point

Relevant CQs:

- What do you think of the actor's volume?
- How did you feel about the intensity?
- How would you describe the pacing of the show?

Definition: A non tactile component that describes dynamics, pacing, pitch, energy or other mode of execution.

INTANGIBLE_REALIZATION_ELEMENT describes the way that something is performed or executed, whereas an INTANGIBLE_PROPERTY describes the content that is executed.

Some examples of an INTANGIBLE_REALIZATION_ELEMENT include:

- Performance Elements:
 - Speed
 - Pacing
 - Intensity of movement
 - Vocal delivery
 - Energy
 - Tempo
 - Volume
 - Pitch
 - Intensity
 - Colour
 - Mood
 - Tone

rdfs:Class	Pair_cg:intangible_realization_element
rdfs:subClassOf	
skos:prefLabel	
Usage note	

Class: intangible_property

Juncture point

Relevant CQs:

- What do you think of the plot of the piece?
- How did you feel about the main character?
- How would you describe the conflict in the story?

Definition: A non tactile attribute, quality, or characteristic relating to content.

Some examples include, but are not limited to:

- Setting
- Character
- Plot
- Conflict
- Resolution
- Point of View

- Theme
- Form
- Style
- Genre

rdfs:Class	Pair_cg:intangible_property
rdfs:subClassOf	
skos:prefLabel	
Usage note	

Class: discipline

Relevant CQs:

1. What type of show is it?
2. What disciplines are present in the work?
3. Is this a dance piece?

Definition: An area of concentration; a field of practice.

rdfs:Class	Pair_cg:discipline
rdfs:subClassOf	
skos:prefLabel	
Usage note	

Class: combinatorial_mode

Combinatorialmode

Disciplinarity

Relevant CQs:

What combinatorial_mode is the presentation?

Is it an interdisciplinary piece?

Definition: The way in which one or more disciplines are used or combined.

rdfs:Class	pair-cg:combinatorial_mode
------------	----------------------------

rdfs:subClassOf	
skos:prefLabel	combinatorial_mode
Usage note	<p>Sample instance:</p> <p>Intradisciplinary (working within a single discipline)</p> <p>Cross Disciplinary (viewing one discipline from the perspective of another)</p> <p>Multidisciplinary (people from different disciplines working together, each drawing on their disciplinary knowledge),</p> <p>Interdisciplinary (integrating knowledge and methods from different disciplines, using a real synthesis of approaches)</p> <p>Transdisciplinary (creating a unity of intellectual frameworks beyond the disciplinary perspectives).</p> <p>Reference: https://www.arj.no/2012/03/12/disciplinarity-2/</p> <p>see reference: https://www.arj.no/2012/03/12/disciplinarity-2/</p>

Class: artefact

Relevant CQs:

- What directorial notes exist about the work?
- What documentation exists about this performance?

Definition: An object tangible or intangible made or shaped by some agent or intelligence, not necessarily of direct human origin.

Some common artefacts of a PERFORMANCE_WORK include:

1. A stage manager's prompt book.
2. A printed script.
3. The printed score of a concerto.
4. A choreographer's written notations of a dance piece.
5. A photograph.

An example of an intangible ARTEFACT:

1. Software (E.g. the app developed for Cafe Sarajevo)
2. Video (E.g. the digital video recording of a dance)

rdfs:Class	Pair_cg:artefact
------------	------------------

rdfs:subClassOf	
skos:prefLabel	
Usage note	

Class: creative_material_artefact

synonym: performance_text

Relevant CQs:

What script was performed?

When will this play be published?

Where can I buy Andrea Scott's play Controlled Damage?

Where can I get the libretto for Traviata?

Who wrote the musical score?

Definition: A type of ARTEFACT for CREATIVE_MATERIAL that uses language or symbols to indicate elements to be performed.

Examples: A musical score (a written form of a musical composition), written script, or dance notation are all examples of a CREATIVE_MATERIAL_ARTEFACT. A printed musical score may include pitches, rhythms, or chords of songs or instrumental musical pieces. In the case of a script or text, the document may contain acts, scenes, characters, dialogues and stage directions. A dance score may include notations, descriptions, visuals or diagrams of the choreography. The software that embodies a lighting design or sound design is also a CREATIVE_MATERIAL_ARTEFACT.

rdfs:Class	Pair_cg:creative_material_artefact
rdfs:subClassOf	Pair_cg: artefact
skos:prefLabel	
Usage note	

Class: artistic_intention

Relevant CQs:

4. What do you think the artist intended to make me feel during that piece?
5. Was I supposed to laugh at that moment? What was the artist going for?
6. What do you think the artist's intention was with the performance work?

Definition: An AGENT's purpose or motivation that they wish to achieve.

rdfs:Class	Pair_cg:artistic_intention
rdfs:subClassOf	
skos:prefLabel	
Usage note	

Relationship label: induces

rdf:Property	pair_cg:induces
rdfs:domain	pair_cg:performance_realization
rdfs:range	pair_cg:state
skos:prefLabel	induces
Usage note	

Class: agent

Relevant CQs:

1. What AGENTs were in the ARTISTIC_PROCESS_TEAM?
2. Who was the director?
3. What animals performed in the horse show?
4. What is the name of that robot dancer?
5. What kind of a performer is R2D2?

Definition: A PERSON or THING that takes an active ROLE within the context of the performing arts.

A THING could be, for example, a robot, an organization, a group of people, an animal.

rdfs:Class	namespace: agent
------------	-------------------------

rdfs:subClassOf	
skos:prefLabel	Agent
Usage note	

Class: contribution

Definition: something given or contributed towards bringing about a result or helping something to advance.

rdfs:Class	Pair_cg:contribution
rdfs:subClassOf	
skos:prefLabel	contribution
Usage note	

Class: creative_contribution

A CREATIVE_CONTRIBUTION is a type of CONTRIBUTION that includes generation of creative ideas or materials by an individual in a group, helping the creative performance of other group members or stimulating the creative energy of other group members.

Generating CREATIVE_MATERIAL is a form of CREATIVE_CONTRIBUTION.

When you improvise, you make three types of CREATIVE_CONTRIBUTION.

1. You contribute CREATIVE_MATERIAL
2. You contribute a PERFORMANCE_WORK
3. You contribute the PERFORMANCE_REALIZATION

rdfs:Class	Pair_cg: creative_contribution
rdfs:subClassOf	Pai_cg: contribution
skos:prefLabel	Creative Contribution
Usage note	

Class: person

Person ontology will be imported for use.

<https://www.w3.org/ns/person>

Declare mappings to existing ontologies for describing people.

Class: attendee

Synonyms: audience member, witness, patron

Definition: An entity that is present at a REALIZATION_ACTIVITY with the intent of experiencing it.

rdfs:Class	Pair_cg:attendee
rdfs:subClassOf	
skos:prefLabel	
Usage note	

Group

Class: group_of_agents

Relevant CQs:

Definition: One or more AGENTS.

rdfs:Class	Pair_cg:group_of_agents
rdfs:subClassOf	
skos:prefLabel	

Usage note	
------------	--

Relationship label: has_member

rdf:Property	pair_cg:has_member
rdfs:domain	pair_cg:
rdfs:range	pair_cg:artistic_process_team
skos:prefLabel	Has_member
Usage note	

Class: artistic_process_team

Relevant CQs:

- Who was involved in developing the show?
- What team of artists are responsible for putting on the show?

Synonyms: creative team, the company, troupe

Definition: A group of AGENTS responsible for some aspect of the ARTISTIC_PROCESS. In order to be a member of this group, an AGENT must make a CONTRIBUTION within the ARTISTIC_PROCESS.

rdfs:Class	Pair_cg:artistic_process_team
rdfs:subClassOf	Pair_cg:group_of_agents
skos:prefLabel	
Usage note	

See appendix for more groups.

Role

Class: role

Definition: a set of connected behaviours, rights, obligations, beliefs and norms as conceptualised by people in a performing arts context.

rdfs:Class	pair_cg:role
rdfs:subClassOf	
skos:prefLabel	Role
Usage note	Sample instance:

Class: has_role

rdfs:Class	pair_cg:has_role
rdfs:subClassOf	
skos:prefLabel	Role
Usage note	Sample instance:

See appendix for more roles.

Class: creative_delivery_method

Definition: an approach, system, technology, device, application or method that is used to transfer or convey creative_material to an attendee.

Example 1:

In the case of bluemouth inc.'s PERFORMANCE_WORK Cafe Sarajevo, the company developed a new headset system for audiences to experience the show. The headset system used RF headphones in combination with a custom iOS application developed

by Jacob Niedzwiecki. The headset system allowed audiences to receive 360 video that was cued simultaneously. The CREATIVE_DELIVERY_METHOD of the headset system resulted in a creative innovation for research purposes.

Example 2:

UnSpun Theatre's PERFORMANCE_WORK Lost Together invites audiences to share a story about something they have lost. Throughout the conversation, the two artists work together to re-imagine and recreate that lost thing for the audience member. The created objects become a part of an ever-evolving exhibition. This creative approach of conversation and tangible object making is a CREATIVE_DELIVERY_METHOD within the piece.

Other examples of a creative_delivery_approach could include projection-mapping, augmented-reality, use of a phone or web applications to name a few.

rdfs:Class	pair_cg:
rdfs:subClassOf	
skos:prefLabel	
Usage note	Sample instance:

Evaluation

TBD

Appendix: Groups

Content to be moved to sub ontology dedicated to groups that will be developed at a later stage.

Groups:

Class: performance_participants

Relevant CQs:

- What team of artists are responsible for putting on the show?

Definition: A group of one or more AGENTS responsible for realizing a PERFORMANCE_WORK.

rdfs:Class	pair_cg:
rdfs:subClassOf	
skos:prefLabel	cast_member
Usage note	

Class: attendee_group

CQ: How many people were in the audience?

Synonym / alternative label: **audience**

Definition: one or more people who experience a PERFORMANCE_REALIZATION.

A member of this group is a person who performs an AUDIENCE_ROLE within the ARTISTIC_PROCESS.

rdfs:Class	pair_cg:attendee_group
rdfs:subClassOf	
skos:prefLabel	attendee_group
Usage note	

Cast - the collection of performers engaged to participate in the process of rendering a work, within a specific time period. (from Bill)

How we deal with performance groups such as troupe, band or collective needs to be further refined in later work.

```
cast(ct1)
person(p1), person(p2), person(p3)
performance_realization(pr1)
has_cast_member(pr1, p1)  ----- infer ----- > cast_member(p1)
has_cast_member(pr1, p2), has_cast_member(pr1, p3)
```

Include company, cast, orchestra, ensemble to be added later.

Groups are induced by roles, and roles need to be defined first before looking at the taxonomies.

Appendix: Agents

Taxonomy of agents.

Class: performer

Internal Juncture - will be expanded in future work.

Relevant CQs:

6. Who is the star performer of the show?
7. What performers appeared in bluemouth inc.'s *Cafe Sarajevo*?

Synonym: realizer

Definition: A single AGENT that takes on a PERFORMER_ROLE.

rdfs:Class	Pair_cg:performer
rdfs:subClassOf	
skos:prefLabel	performer
Usage note	

Class: creator

Class: playwright

Appendix: Roles

Role

Class: audience_role

Relevant CQs:

1. Who witnessed the event?
2. How did the audience feel?
3. How did spectators of the experience respond?

Synonyms: witness, audience, spectator, participant, player, patron, attendee

Definition: a PERSON who attends a PERFORMANCE_REALIZATION in order to experience it.

rdfs:Class	Pair_cg:audience_role
------------	-----------------------

rdfs:subClassOf	
skos:prefLabel	
Usage note	

Class: participant_role

Definition: an AGENT designated to take on a set of connected behaviours, rights, obligations, beliefs and norms as conceptualised by people in a performing arts context.

rdfs:Class	pair_cg:participant_role
rdfs:subClassOf	?:creative_role
skos:prefLabel	Creative Role
Usage note	

Class: performer_role

Definition: an AGENT designated to perform in a PERFORMANCE_REALIZATION.

Jully Black took on a role in the hit PERFORMANCE_WORK called “Caroline, or Change”. In the piece, Black took on the star PERFORMER_ROLE of Caroline Thibodeaux, the main protagonist in the story.

rdfs:Class	pair_cg:performer_participant_role
rdfs:subClassOf	?:creative_role
skos:prefLabel	Creative Role
Usage note	

Class: creator_role

Relevant CQs:

1. Who is responsible for creating the show?

Definition: An AGENT that brings something into being or existence using creativity, vision, craft and skill.

rdfs:Class	pair_cg:creator_role
rdfs:subClassOf	pair_cg:creative_role
skos:prefLabel	Creator_Role
Usage note	

Class: director_role

Relevant CQs:

2. Who is responsible for directing the show?

Definition: An AGENT responsible for conceiving, developing and implementing the artistic vision of a PERFORMANCE_WORK in collaboration with other ARTISTIC_PROCESS_TEAM members.

rdfs:Class	pair_cg:director_role
rdfs:subClassOf	pair_cg:Agent
skos:prefLabel	
Usage note	

Class: funder_role

Relevant CQ:

Who funded the production?

What organizations provided financial resources to develop the piece?

Definition: an entity that provided financial resources to the ARTISTIC_PROCESS.

rdfs:Class	pair_cg:funder_role
rdfs:subClassOf	pair_cg:Agent
skos:prefLabel	funder
Usage note	Instances of funder: The High Commission of Canada in Singapore, Canadian Heritage, Canada Council for the Arts, Ontario Arts Council, Toronto Arts Council, the M1 Singapore Fringe Festival, and the Summerworks Performance Festival.

Class: producer_role

Relevant CQs:

3. Who produced the production?

Definition: An entity who oversees all aspects of developing a PERFORMANCE_WORK and mounting a PERFORMANCE_REALIZATION. The producer is responsible for the overall financial and managerial functions, raises or provides financial backing, and hires personnel for creative positions.

rdfs:Class	Pair_cg:producer_role
rdfs:subClassOf	creative_role
skos:prefLabel	producer_role
Usage note	

Class: presenter_role

Relevant CQs:

4. Who is responsible for presenting the show?

Definition: An AGENT that selects PERFORMANCE_WORKS for public presentation based on an ARTISTIC VISION.

The responsibilities of a PRESENTER_ROLE includes purchasing and/or programming PERFORMANCE_WORKS created by professional artists, groups and companies for public presentation; paying a guaranteed fee for each

PERFORMANCE_REALIZATION; coordinating the VENUE and supplying the technical and promotional support.

AGENTS that take on a PRESENTER_ROLE may also organize audience development and/or outreach in support of their artistic programming. They have a thorough knowledge of AUDIENCES in their communities, of the professional arts community and of the various networks that support both the ARTISTS and the PRESENTERS.”

rdfs:Class	Pair_cg:presenter_role
rdfs:subClassOf	role
skos:prefLabel	Presenter_Role
Usage note	

More roles to be added in future work
Indexes like SOC AND NOC and NAICS have definitions (Jessa)

Appendix: States

Class: human_state

Juncture point

Relevant CQs:

1. What did the show make you feel?
2. How sad was the show?
3. How do you think the show will make me feel? What emotional state will it put me in?

Definition: the particular condition that a PERSON is in at a specific time.

rdfs:Class	Pair_cg:human_state
rdfs:subClassOf	
skos:prefLabel	
Usage note	

