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REusable  
MUSical data



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MUSical data

# Learning material : data model

<http://www.doremus.org>

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Ourouk

# Summary

- Introduction
- Data access
- Data model overview
- Controlled vocabularies for DOREMUS

# Introduction

# Introduction

## Target audience

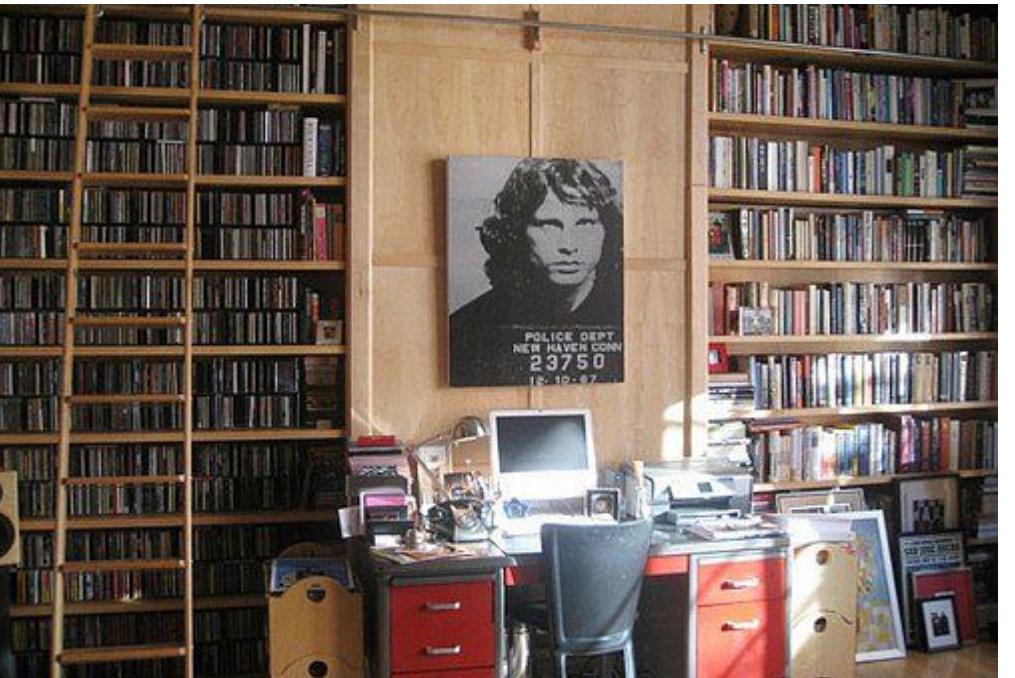
This presentation of the DOREMUS model is intended for anyone who:

- Describe musical resources according to the DOREMUS model
- Publish musical data according to the DOREMUS model
- Explore a RDF DOREMUS graph
- Integrate musical data conforming DOREMUS model into applications or knowledge graphs

This presentation is intended for documentalists as for computer scientists. The two visions are presented. The collection of slides can be adapted according to the public.

# Introduction

There are multiple points of view on a same domain



« People » view

Love stories, Gossips, News

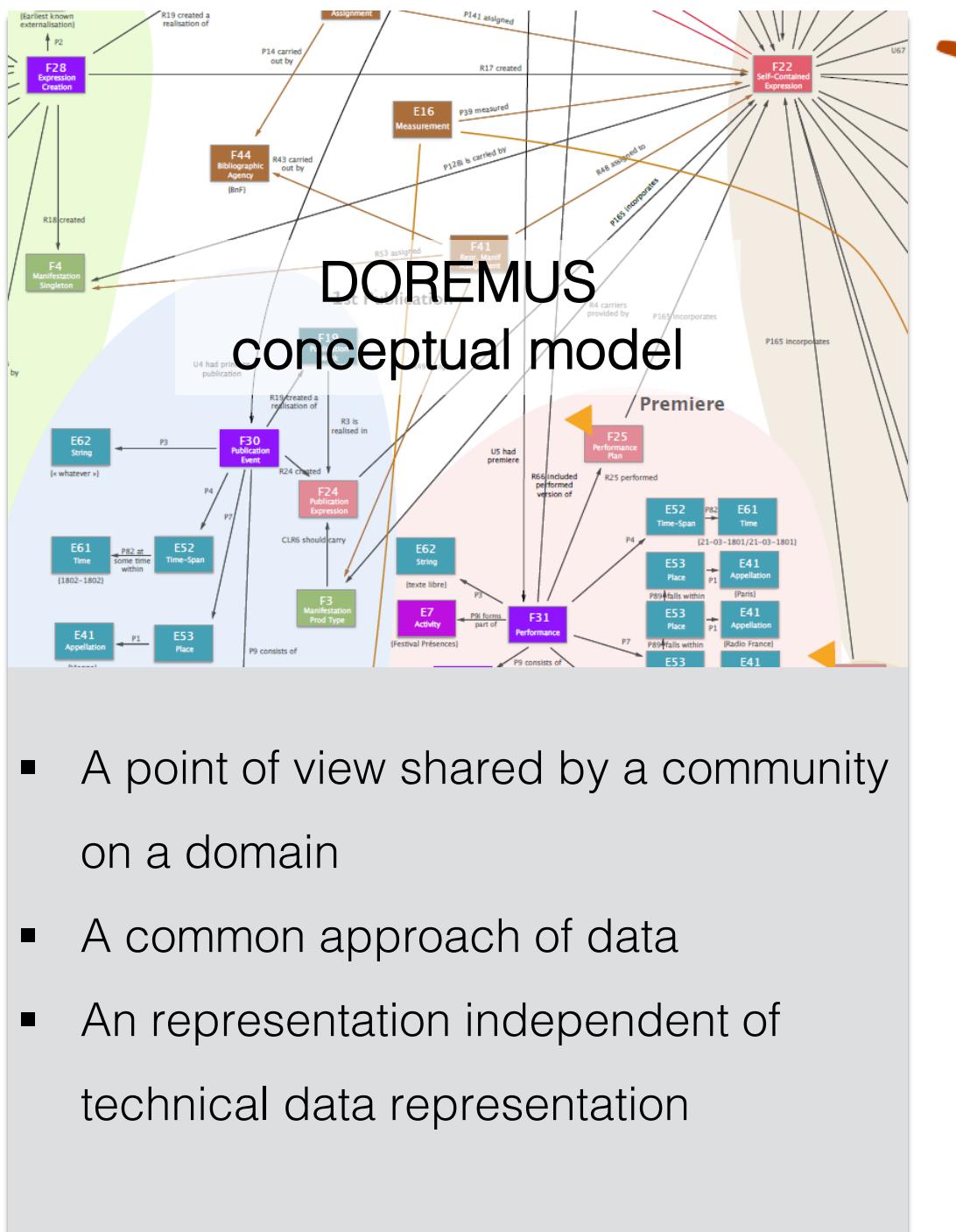
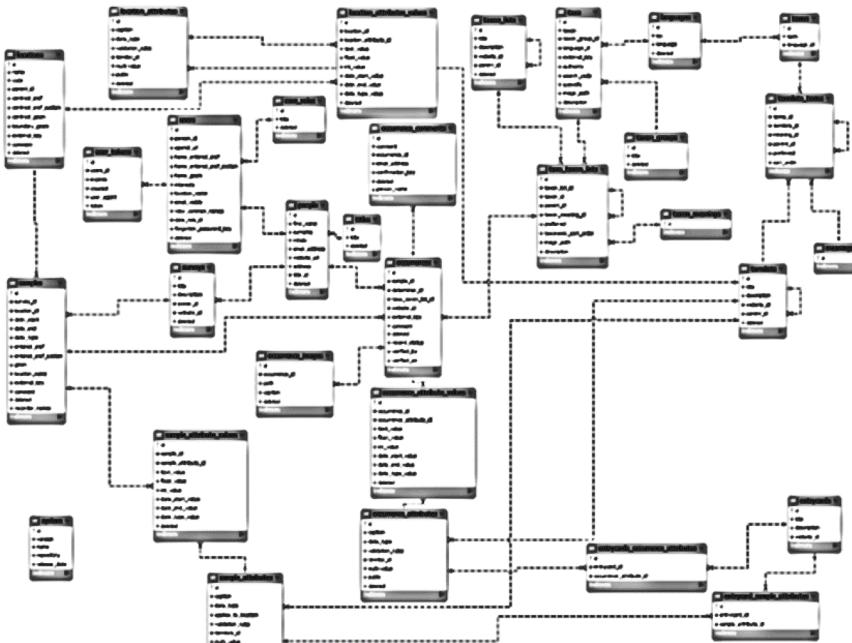
« Music librarian » view

Concerts, Albums, Works

# Introduction

## From conceptual to data model

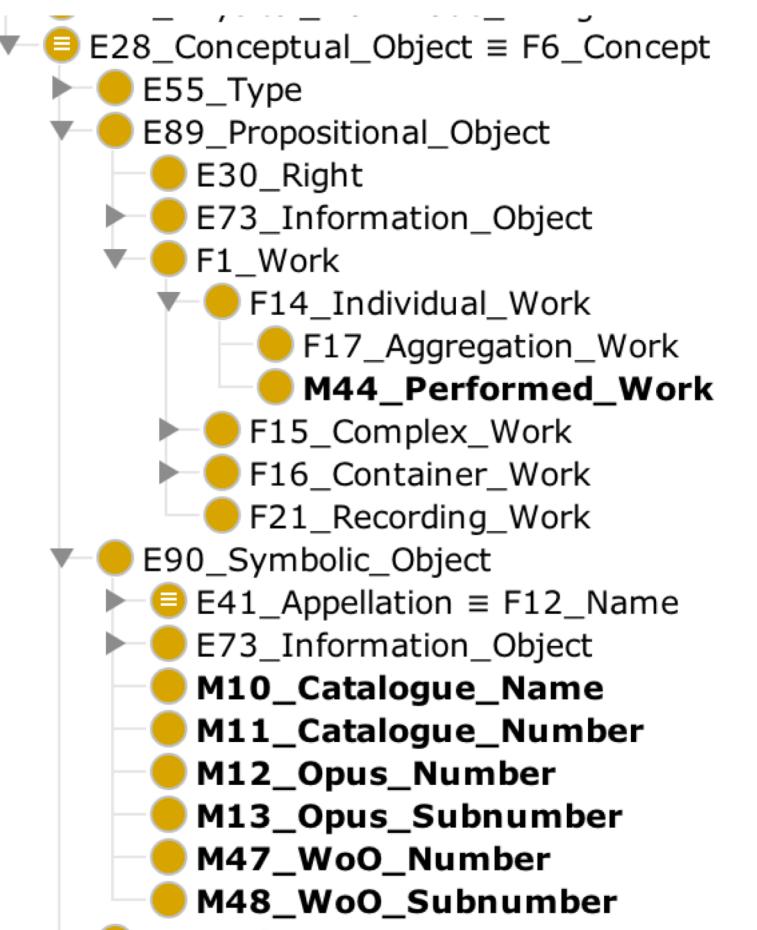
Entity Relation data model



DOREMUS  
conceptual model

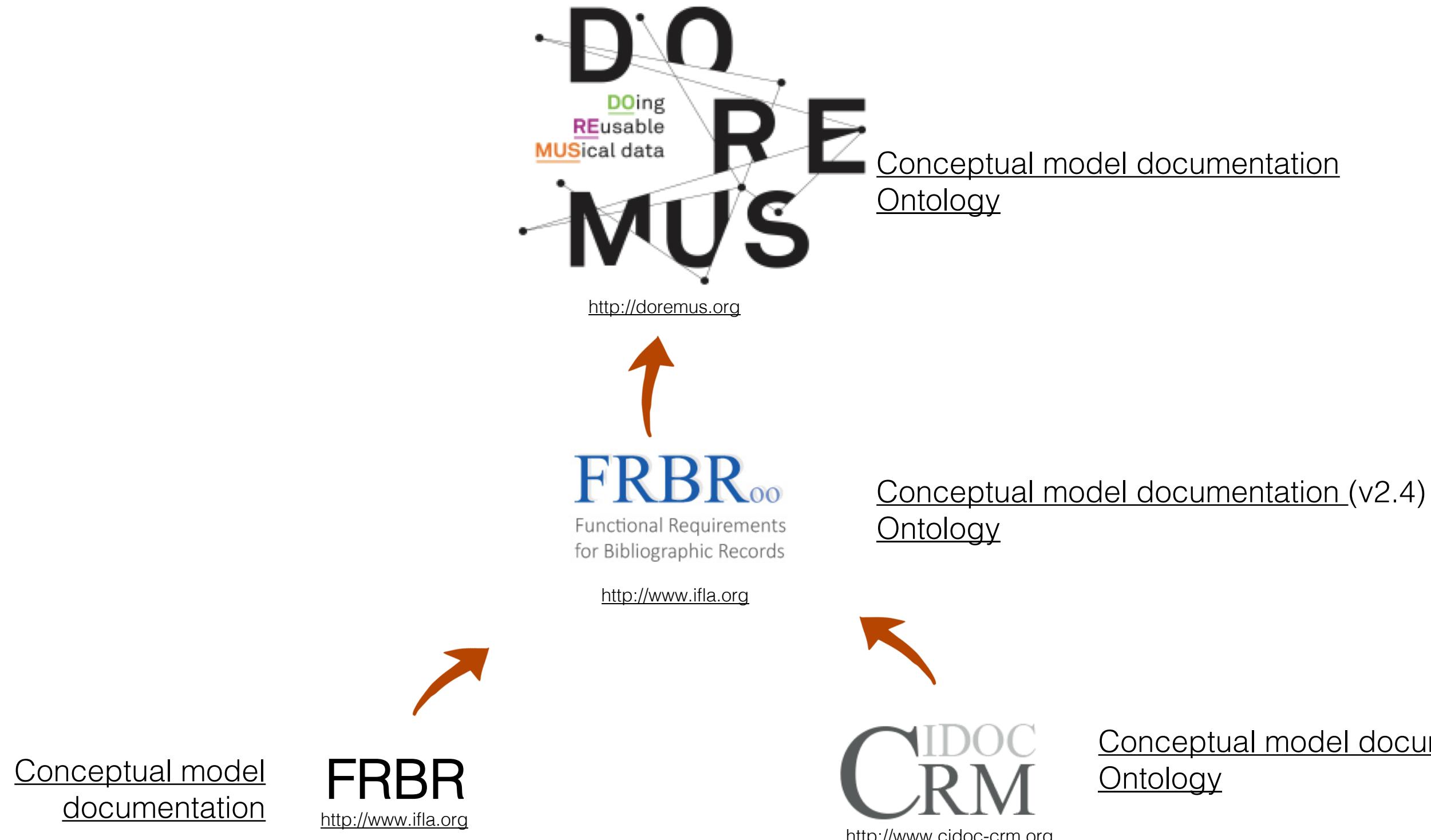
- A point of view shared by a community on a domain
- A common approach of data
- An representation independent of technical data representation

Ontology OWL for  
RDF data representation



# Introduction

## DOREMUS bases



# Data access

# Data access

# Access for humans & machines



**Sonata quasi una fantasia**

Ludwig van Beethoven

SONATE AU CLAIR DE LUNE | Moon light sonata | Sonate Mondschein | Sonate pour piano n°14 'Clair de lune'

Première publication : Vienne, Cappi, 1802

Dédicace à la comtesse Giulietta Guicciardi. Parue sous le nom de "Sonate pour piano quasi une fantasia en ut dièse mineur, alla Damigella comtesse Giulietta Guicciardi". Le titre "Clair de lune" fut inventé par le poète Ludwig Rålstedt. Comprend : 1-adagio sostenuto, 2-allegretto, 3-presto agitato

KEY: C Sharp Minor  
GENRE: Sonatamusicque Romantique  
OPUS: Op. 27 no 2  
CASTING: Piano

**of the same genre**

- Ludwig van Beethoven - Grande sonate pathétique
- 3 sonates
- Niccolò Paganini - Centone di sonate No 3

**of the same composer**

- Ludwig van Beethoven - Bonnie laddie, Highland laddie

OVERTURE allows you to explore data about the works of Ludwig Dutilleux. This data is also available at [data.doremus.org/sparql](http://data.doremus.org/sparql).

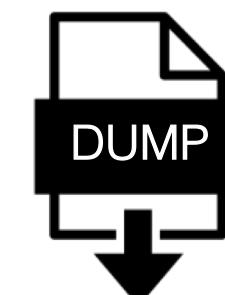
<http://overture.doremus.org/>



<http://data.doremus.org/sparql>



<http://data.doremus.org/api>



<https://github.com/DOREMUS-ANR/knowledge-base/tree/master/data>

# Data model overview

# Data model overview

## Naming conventions

### Classes

**M** = Classes Doremus

**E** = Classes CIDOC-CRM

**F** = Classes FRBRoo

### Properties

**U, CLU** = Propriétés Doremus

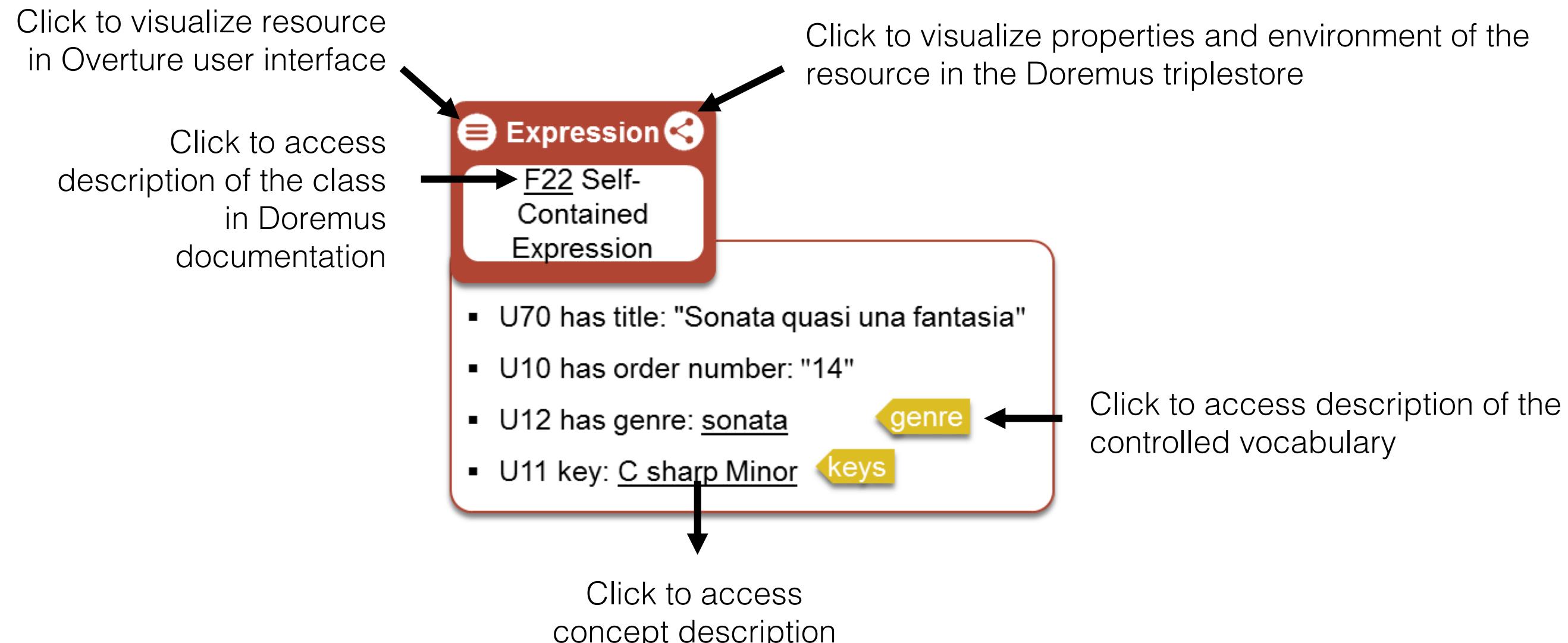
**P** = Propriétés CIDOC-CRM

**R** = Propriétés FRBRoo

**CLP, CLR** = peuvent être des propriétés FRBRoo ou Doremus

# Data model overview

## How to use the next slides ?



# Data model overview

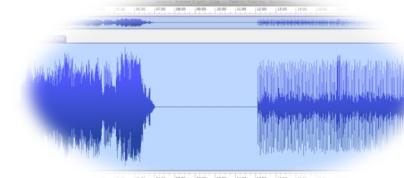
## Timeline



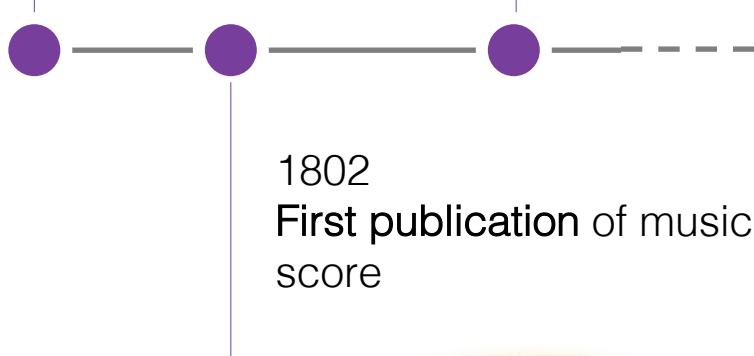
1801  
Composition of  
*Sonata quasi una  
fantasia* by  
Beethoven



2014  
Studio Performance

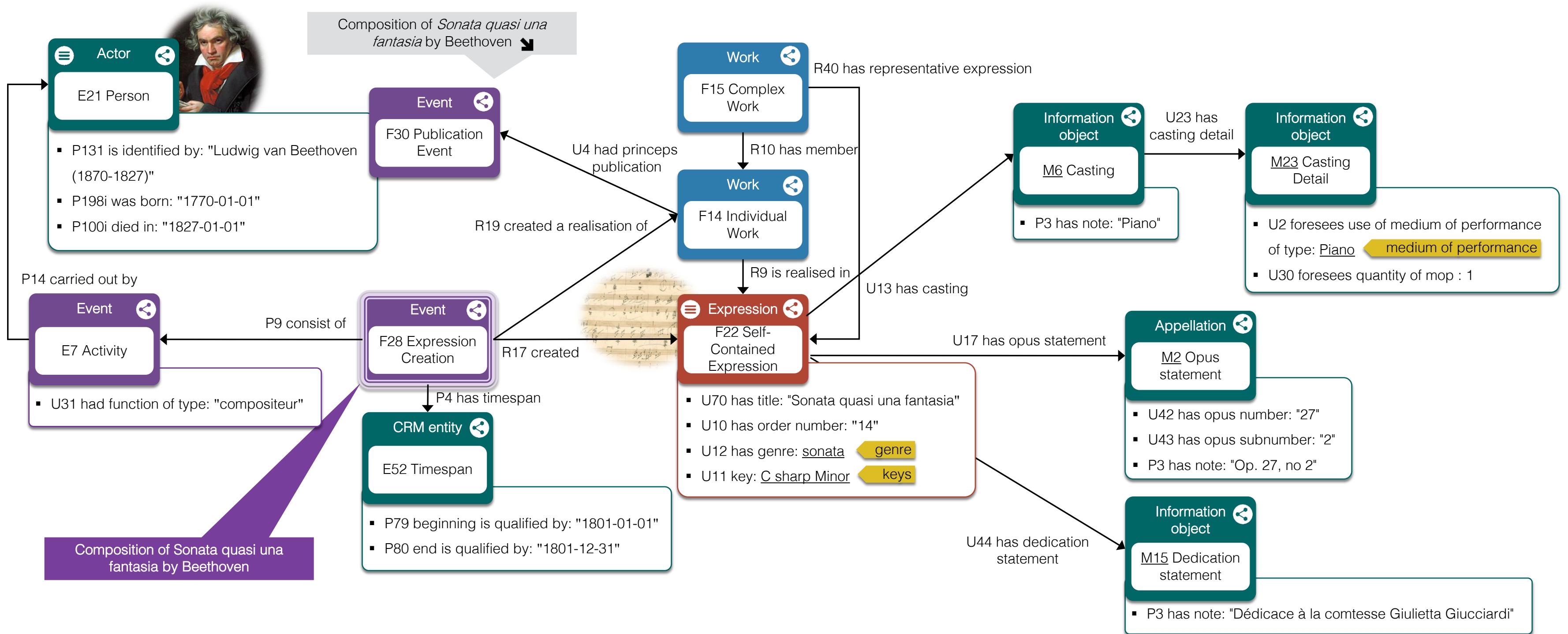


2014  
Editing tracks of Recording



# Data model overview

## Musical composition



# Original notice in BNF catalog

# Musical composition

**{BnF Catalogue général}**

Tout Recherche avancée AUTEURS A-Z SUJETS A-Z PÉRIODIQUES CO

Accueil > Titre uniforme musical

**Notice de titre musical**

Notice Au format public

Beethoven, Ludwig van (1770-1827) forme internationale  
[Sonates. Piano. Op. 27, no 2. Do dièse mineur] français

Genre musical : sonate

Date de l'oeuvre : 1801

Dédicace à la comtesse Giulietta Giucciardi. - Date de composition : 1801. - 1re éd. : Vienne : Cappi, 1802

Distribution musicale : clavier - piano (1)

Forme(s) rejetée(s) :

- < [Sonates. Piano. No 14. Do dièse mineur] français
- < [Quasi una fantasia. Op. 27, no 2 (Sonate)] italien
- < [Sonata quasi una fantasia. Op. 27, no 2] italien
- < [Moonlight sonata] anglais
- < [Clair de lune (Sonate)] français
- < [Mondschein-Sonate] allemand
- < [Sonate au clair de lune] français
- < [Sonate Clair de lune] français

Forme(s) associée(s) :

- << Fait partie de : Beethoven, Ludwig van (1770-1827). [Sonates (2). Op. 27]
- >> << A pour adaptation : Huguenin, Charles (1870-1939). [Prière de l'âme affligée]
- >> << A inspiré : Garde, Bernard (1953-....). [Nuit Sélène]
- >> << Postérieurement, voir : Garde, Bernard (1953-....). [Cantate au clair de lune]

Source(s) :

- Kinsky
- Grove 7

Notice n° : FRBNF13908188

Création : 89/08/21 Mise à jour : 13/02/11

Notice Au format Unimarc

000 cx h22 45  
 001 FRBNF139081882  
 005 20130211  
 009 <http://catalogue.bnf.fr/ark:/12148/cb13908188k>  
 039 .. \$o OPP \$a 14786691 \$d 20060411  
 039 .. \$o OPP \$a 16305693 \$d 20130211  
 100 .. \$a 19890821afrey50 ba0  
 102 .. \$a XX  
 103 .. \$a 1801  
 106 .. \$a 010  
 128 .. \$a n \$b ka01  
 152 .. \$a AFNOR Z 44-079 Sc 2  
 240 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 frefre \$t Sonates \$r Piano \$s Op. 27, no 2 \$u Do dièse mineur  
 300 |. \$a Dédicace à la comtesse Giulietta Giucciardi. - Date de composition : 1801. - 1re éd. : Vienne : Cappi, 1802  
 440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 frefre \$t Sonates \$r Piano \$s No 14 \$u Do dièse mineur  
 440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 freita \$t Quasi una fantasia \$s Op. 27, no 2 \$l Sonate  
 440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 freita \$t Sonata quasi una fantasia \$s Op. 27, no 2  
 440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 freeng \$t Moonlight sonata  
 440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 frefre \$t Clair de lune \$l Sonate  
 440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 freger \$t Mondschein-Sonate  
 440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 frefre \$t Sonate au clair de lune  
 440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 frefre \$t Sonate Clair de lune  
 540 .. \$5 xxc \$0 A pour adaptation : \$3 [17075835](#) \$a Huguenin \$b Charles \$f 1870-1939 \$t [Prière de l'âme affligée]  
 540 .. \$5 xxz \$0 A inspiré : \$3 [17067436](#) \$a Garde \$b Bernard \$f 1953-.... \$t [Nuit Sélène]  
 540 .. \$5 xxh \$0 Postérieurement, voir \$3 [17067430](#) \$a Garde \$b Bernard \$f 1953-.... \$t [Cantate au clair de lune]  
 540 .. \$5 g \$3 [14017453](#) \$a Beethoven \$b Ludwig van \$f 1770-1827 \$t [Sonates (2). Op. 27]  
 801 .. \$a FR \$b FR-751131015 \$c 20130211  
 810 .. \$a Kinsky  
 810 .. \$a Grove 7

Access original notice in BNF catalog :  
<http://catalogue.bnf.fr/ark:/12148/cb13908188k.public>

# RDF graph

## Musical composition 1/2

```

1 @prefix mus: <http://data.doremus.org/ontology#> .
2 @prefix efrbroo: <http://erlangen-crm.org/efrbroo/> .
3 @prefix skos: <http://www.w3.org/2004/02/skos/core#> .
4 @prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
5 @prefix ecrm: <http://erlangen-crm.org/current/> .
6 @prefix owl: <http://www.w3.org/2002/07/owl#> .
7 @prefix dct: <http://purl.org/dc/terms/> .
8
9 <http://data.doremus.org/work/bde624b9-ae05-3ce5-b8db-67f6fa133d85>
10    rdf:type efrbroo:F15_Complex_Work ;
11    efrbroo:R40_has_representative_expression <http://data.doremus.org/expression/d72301f0-0aba-3ba6-93e5-c4efbee9c6ea> ;
12    efrbroo:R10_has_member <http://data.doremus.org/work/30256b51-d277-3688-ad62-560ae982ff2f> .
13
14 <http://data.doremus.org/work/30256b51-d277-3688-ad62-560ae982ff2f>
15    rdf:type efrbroo:F14_Individual_Work ;
16    mus:U4_had_princeps_publication <http://data.doremus.org/event/9f25e0d8-2abb-3034-a902-c8b469091556> ;
17    efrbroo:R9_is_realised_in <http://data.doremus.org/expression/d72301f0-0aba-3ba6-93e5-c4efbee9c6ea> .
18
19 <http://data.doremus.org/expression/d72301f0-0aba-3ba6-93e5-c4efbee9c6ea>
20    rdf:type efrbroo:F22_Self-Contained_Expression ;
21    mus:U10_has_order_number "14" ;
22    ecrm:P102_has_title "Quasi una fantasia" , "Sonate Clair de lune" , "Mondschein-Sonate" , "Sonata quasi una fantasia" , "Sonate au clair de lune" , "Moonlight sonata" , "Clair de lune"
23    ecrm:P67_refers_to <http://data.doremus.org/expression/d72301f0-0aba-3ba6-93e5-c4efbee9c6ea/dedication> .
24    mus:U17_has_opus_statement
25      [ rdf:type mus:M2_Opus_Statement ;
26        ecrm:P3_has_note "Op. 27, no 2" ;
27        mus:U43_has_opus_subnumber "2" ;
28        mus:U42_has_opus_number "27" ] ;
29    mus:U12_has_genre <http://data.doremus.org/vocabulary/iaml/genre/sn> ;
30    mus:U13_has_casting <http://data.doremus.org/expression/d72301f0-0aba-3ba6-93e5-c4efbee9c6ea/casting/1> ;
31    mus:U11_has_key <http://data.doremus.org/vocabulary/key/cxm> .
32
33 <http://data.doremus.org/vocabulary/iaml/genre/sn>
34    rdf:type skos:Concept ;
35    skos:prefLabel "Sonate"@de , "sonate"@fr , "sonata"@es , "sonata"@en , "sonata"@it .
36
37 <http://data.doremus.org/vocabulary/key/cxm>
38    rdf:type skos:Concept ;
39    skos:prefLabel "Do diesis minore"@it , "Cis Moll"@de , "Do sostenido menor"@es , "Do dièse mineur"@fr , "C sharp Minor"@en .
40

```

# RDF graph

## Musical composition 2/2

```

41 <http://data.doremus.org/event/3f9d2fae-da75-3c66-902d-fa3a0755d892>
42   rdf:type efrbroo:F28_Expression_Creation ;
43   efrbroo:R17_created <http://data.doremus.org/expression/d72301f0-0aba-3ba6-93e5-c4efbee9c6ea> ;
44   efrbroo:R19_created_a_realisation_of <http://data.doremus.org/work/30256b51-d277-3688-ad62-560ae982ff2f> .
45   ecrm:P9_consists_of
46     [ mus:U31_had_function_of_type "compositeur"@fr ;
47       ecrm:P14_carried_out_by <http://data.doremus.org/artist/6963af5e-b126-3d40-a84b-97e0b78f5452> ] ;
48   ecrm:P4_has_time-span [ecrm:P82_at_some_time_within "18010101/18011231"^^dct:W3CDTF] .
49
50 <http://data.doremus.org/artist/6963af5e-b126-3d40-a84b-97e0b78f5452>
51   rdf:type ecrm:E21_Person ;
52   owl:sameAs <http://isni.org/isni/0000000121268987> , <http://catalogue.bnf.fr/ark:/12148/cb138912954> ;
53   ecrm:P131_is_identified_by "Ludwig van Beethoven" ;
54   ecrm:P98i_was_born "1770" .
55
56 <http://data.doremus.org/expression/d72301f0-0aba-3ba6-93e5-c4efbee9c6ea/casting/1>
57   rdf:type mus:M6_Casting ;
58   ecrm:P3_has_note "Piano" ;
59   mus:U23_has_casting_detail
60     [ rdf:type mus:M23_Casting_Detail ;
61       mus:U2_foresees_use_of_medium_of_performance_of_type <http://data.doremus.org/vocabulary/iaml/mop/kpf> ] .
62 <http://data.doremus.org/vocabulary/iaml/mop/kpf>
63   rdf:type skos:Concept ;
64   skos:prefLabel "Klavier"@de , "piano"@pt , "piano"@fr , "piano"@es , "piano"@en , "pianoforte"@it .
65
66 <http://data.doremus.org/expression/d72301f0-0aba-3ba6-93e5-c4efbee9c6ea/dedication>
67   rdf:type mus:M15_Dedication ;
68   mus:U44_has_dedication_statement "Dédicace à la comtesse Giulietta Giucciardi"@fr .

```

# Sparql query

## Musical composition

QUERY : Find all musical works of genre « sonata » composed for « piano »

```

1  SELECT DISTINCT ?F22_Self_Contained_Expression (SAMPLE(?title) AS ?title) ?composerName
2
3  WHERE {
4    ?F22_Self_Contained_Expression mus:U12_has_genre <http://data.doremus.org/vocabulary/iaml/genre/sn>;
5                                mus:U13_has_casting/mus:U23_has_casting_detail/mus:U2_foresees_use_of_medium_of_performance_of_type
6                                <http://data.doremus.org/vocabulary/iaml/mop/kpf>;
7                                ecrm:P102_has_title ?title.
8
9    OPTIONAL {
10      ?F28_Expression_Creation efrbroo:R17_created ?F22_Self_Contained_Expression;
11      ecrm:P9_consists_of/ecrm:P14_carried_out_by/ecrm:P131_is_identified_by ?composerName.
12    }

```

Access original file : [https://drive.google.com/open?id=0BwopBdic2\\_jUSGVPT2hrT3pLZjg](https://drive.google.com/open?id=0BwopBdic2_jUSGVPT2hrT3pLZjg)

Extract of results

F22_Self_Contained_Expression	title	composerName
<a href="http://data.doremus.org/expression/23e6481c-84f9-3b71-951a-b2e9cfa95564">http://data.doremus.org/expression/23e6481c-84f9-3b71-951a-b2e9cfa95564</a>	"Sonata in a minor"	"Franz Schubert"
<a href="http://data.doremus.org/expression/0498b432-8d78-3163-8c2d-ac9feef98310">http://data.doremus.org/expression/0498b432-8d78-3163-8c2d-ac9feef98310</a>	"Messe blanche"	"Aleksandr Nikolaevič Skrâbin"@rus
<a href="http://data.doremus.org/expression/f43ee594-4bc8-382f-8a69-1d0ea18f5be5">http://data.doremus.org/expression/f43ee594-4bc8-382f-8a69-1d0ea18f5be5</a>	"Sonate brève"	"Alexandre Gasparov"
<a href="http://data.doremus.org/expression/1446e248-08ce-3839-9424-30950b48d91e">http://data.doremus.org/expression/1446e248-08ce-3839-9424-30950b48d91e</a>	"Sonatinas"	"Stany David Lasry"
<a href="http://data.doremus.org/expression/a18c404c-54f4-38bd-b3d6-eb7d74e2525b">http://data.doremus.org/expression/a18c404c-54f4-38bd-b3d6-eb7d74e2525b</a>	"Sonate"	"Cécile Chaminade"
	"Sonatinas"	"Stany David Lasry"

# Sarql query

# Musical composition

QUERY : How many musical works by genre

```

1 SELECT ?genre (SAMPLE(?genreLabel) AS ?genreLabel) (COUNT(?F22_Self_Contained_Expression) AS ?F22_Self_Contained_Expression_COUNT)
2
3 WHERE {
4 ?F22_Self_Contained_Expression mus:U12_has_genre ?genre.
5 ?genre skos:prefLabel ?genreLabel.
6 | FILTER regex(lang(?genreLabel), "en")
7 }
8 GROUP BY ?genre
9 ORDER BY DESC(?F22_Self_Contained_Expression_COUNT)

```

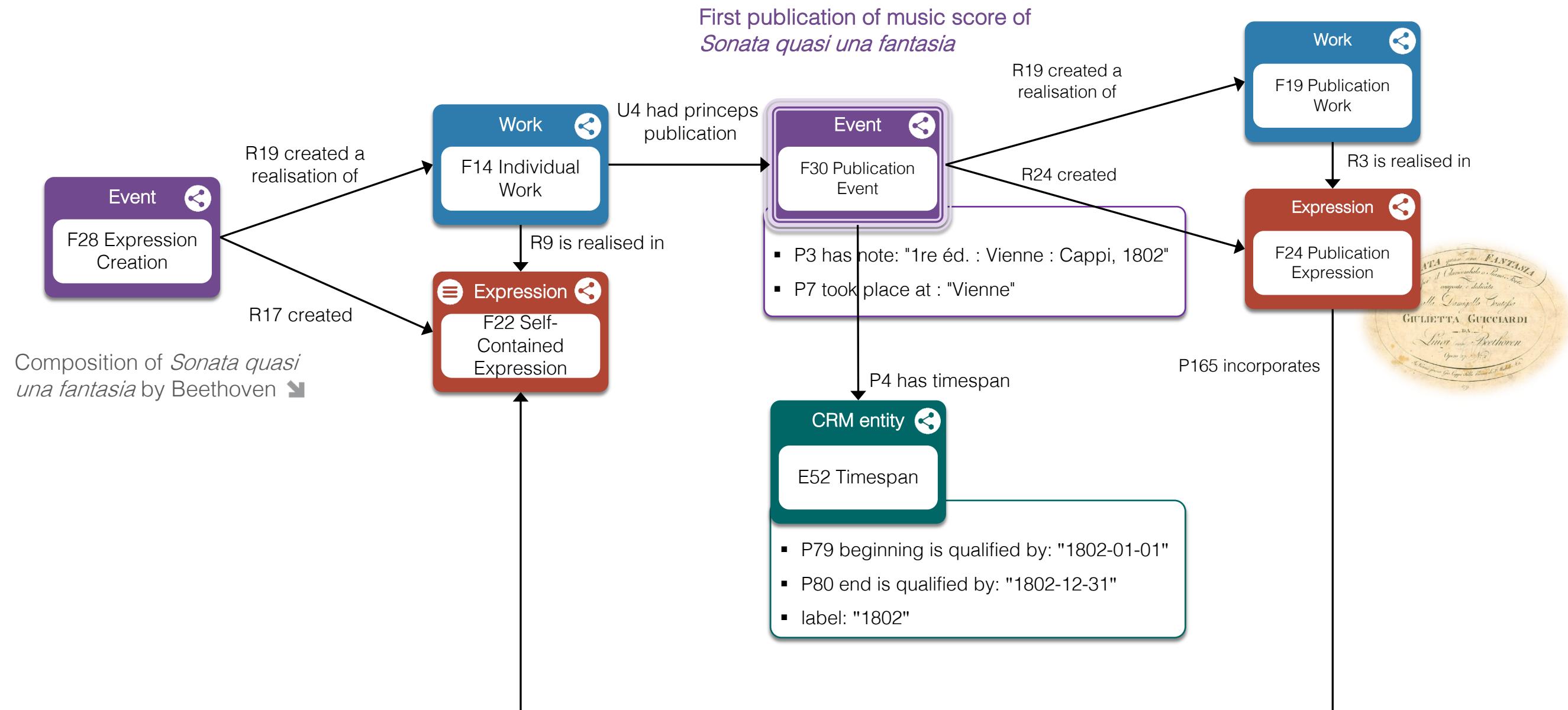
Access original file : [https://drive.google.com/open?id=0BwopBdic2\\_jUczkwYTV4N2M1SjQ](https://drive.google.com/open?id=0BwopBdic2_jUczkwYTV4N2M1SjQ)

Extract of results

genre	genreLabel	F22_Self_Contained_Expression_COUNT
<a href="http://data.doremus.org/vocabulary/iaml/genre/zz">http://data.doremus.org/vocabulary/iaml/genre/zz</a>	"other form"@en	12075
<a href="http://data.doremus.org/vocabulary/iaml/genre/mo">http://data.doremus.org/vocabulary/iaml/genre/mo</a>	"motet"@en	6333
<a href="http://data.doremus.org/vocabulary/iaml/genre/sn">http://data.doremus.org/vocabulary/iaml/genre/sn</a>	"sonata"@en	6002
<a href="http://data.doremus.org/vocabulary/iaml/genre/uuu">http://data.doremus.org/vocabulary/iaml/genre/uuu</a>	"unknown form"@en	5286
<a href="http://data.doremus.org/vocabulary/iaml/genre/co">http://data.doremus.org/vocabulary/iaml/genre/co</a>	"concerto"@en	4638
<a href="http://data.doremus.org/vocabulary/iaml/genre/sg">http://data.doremus.org/vocabulary/iaml/genre/sg</a>	"song"@en	4529
<a href="http://data.doremus.org/vocabulary/iaml/genre/df">http://data.doremus.org/vocabulary/iaml/genre/df</a>	"dance form"@en	4350
<a href="http://data.doremus.org/vocabulary/iaml/genre/wz">http://data.doremus.org/vocabulary/iaml/genre/wz</a>	"waltz"@en	3617
<a href="http://data.doremus.org/vocabulary/iaml/genre/dui">http://data.doremus.org/vocabulary/iaml/genre/dui</a>	"duo"@en	3543
<a href="http://data.doremus.org/vocabulary/iaml/genre/op">http://data.doremus.org/vocabulary/iaml/genre/op</a>	"opera"@en	3024
<a href="http://data.doremus.org/vocabulary/iaml/genre/ct">http://data.doremus.org/vocabulary/iaml/genre/ct</a>	"cantata"@en	3014
	"quartet"@en	2828

# Data model overview

## Music score publication



# Original notice in BNF catalog

# Music score publication

**{BnF Catalogue général}**

Tout Recherche avancée AUTEURS A-Z SUJETS A-Z PÉRIODIQUES CO

Accueil > Titre uniforme musical

**Notice de titre musical**

Notice Au format public

Beethoven, Ludwig van (1770-1827) forme internationale  
[Sonates. Piano. Op. 27, no 2. Do dièse mineur] français

Genre musical : sonate

Date de l'oeuvre : 1801

Dédicace à la comtesse Giulietta Giucciardi. - Date de composition : 1801. - 1re éd. : Vienne : Cappi, 1802

Distribution musicale : clavier - piano (1)

Forme(s) rejetée(s) :

- < [Sonates. Piano. No 14. Do dièse mineur] français
- < [Quasi una fantasia. Op. 27, no 2 (Sonate)] italien
- < [Sonata quasi una fantasia. Op. 27, no 2] italien
- < [Moonlight sonata] anglais
- < [Clair de lune (Sonate)] français
- < [Mondschein-Sonate] allemand
- < [Sonate au clair de lune] français
- < [Sonate Clair de lune] français

Forme(s) associée(s) :

- << Fait partie de : Beethoven, Ludwig van (1770-1827). [Sonates (2). Op. 27]
- >> << A pour adaptation : Huguenin, Charles (1870-1939). [Prière de l'âme affligée]
- >> << A inspiré : Garde, Bernard (1953-....). [Nuit Sélène]
- >> << Postérieurement, voir : Garde, Bernard (1953-....). [Cantate au clair de lune]

Source(s) :

- Kinsky
- Grove 7

Notice n° : FRBNF13908188

Création : 89/08/21 Mise à jour : 13/02/11

Notice Au format Unimarc

000 cx h22 45  
001 FRBNF139081882  
005 20130211  
009 <http://catalogue.bnf.fr/ark:/12148/cb13908188k>  
039 .. \$o OPP \$a 14786691 \$d 20060411  
039 .. \$o OPP \$a 16305693 \$d 20130211  
100 .. \$a 19890821afrey50 ba0  
102 .. \$a XX  
103 .. \$a 1801  
106 .. \$a 010  
128 .. \$a n \$b ka01  
152 .. \$a AFNOR Z 44-079 \$c 2

**300 |. \$a Dédicace à la comtesse Giulietta Giucciardi. - Date de composition : 1801. - 1re éd. : Vienne : Cappi, 1802**

440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 frefre \$t Sonates \$r Piano \$s No 14 \$u Do dièse mineur  
440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 freita \$t Quasi una fantasia \$s Op. 27, no 2 \$l Sonate  
440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 freita \$t Sonata quasi una fantasia \$s Op. 27, no 2  
440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 freeng \$t Moonlight sonata  
440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 frefre \$t Clair de lune \$l Sonate  
440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 freger \$t Mondschein-Sonate  
440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 frefre \$t Sonate au clair de lune  
440 .. \$a Beethoven \$b Ludwig van \$f 1770-1827 \$7 ba0yba0y \$8 frefre \$t Sonate Clair de lune  
540 .. \$5 xx0 \$0 A pour adaptation : \$3 [17075835](#) \$a Huguenin \$b Charles \$f 1870-1939 \$t [Prière de l'âme affligée]  
540 .. \$5 xxz \$0 A inspiré : \$3 [17067436](#) \$a Garde \$b Bernard \$f 1953-.... \$t [Nuit Sélène]  
540 .. \$5 xxh \$0 Postérieurement, voir \$3 [17067430](#) \$a Garde \$b Bernard \$f 1953-.... \$t [Cantate au clair de lune]  
540 .. \$5 g \$3 [14017453](#) \$a Beethoven \$b Ludwig van \$f 1770-1827 \$t [Sonates (2). Op. 27]  
801 .. \$a FR \$b FR-751131015 \$c 20130211  
810 .. \$a Kinsky  
810 .. \$a Grove 7

Access original notice in BNF catalog :  
<http://catalogue.bnf.fr/ark:/12148/cb13908188k.public>

# Sparql query

# Music score publication

QUERY : Find all scores first published in Vienna during 19th century

```

1 2 SELECT ?F30_Publication_Event ?F22_Self_Contained_Expression_TITLE ?F22_Self_Contained_Expression_COMPOSER_NAME ?P79_beginning_isQualified_by ?P80_end_isQualified_by "Vienne"
2
3
4 WHERE {
5   ?F30_Publication_Event a efrbroo:F30_Publication_Event;
6           ecrm:P7_took_place_at "Vienne";
7           ecrm:P4_has_time-span ?P4_has_time_span.
8
9   ?P4_has_time_span ecrm:P80_end_isQualified_by ?P80_end_isQualified_by;
10          ecrm:P79_beginning_isQualified_by ?P79_beginning_isQualified_by.
11          FILTER (?P80_end_isQualified_by < "1899-12-31"^^xsd:dateTime)
12          FILTER (?P79_beginning_isQualified_by > "1800-01-01"^^xsd:dateTime)
13
14 ?F30_Publication_Event ^mus:U4_had_princeps_publication ?F14_Individual_Work.
15   ?F14_Individual_Work efrbroo:R9_is_realised_in ?F22_Self_Contained_Expression.
16
17   ?F22_Self_Contained_Expression mus:U70_has_title ?F22_Self_Contained_Expression_TITLE;
18           ^efrbroo:R17_created ?F28_Expression_Creation.
19           FILTER regex(lang(?F22_Self_Contained_Expression_TITLE), "fr")
20
21   ?F28_Expression_Creation ecrm:P9_consists_of/ecrm:P14_carried_out_by/ecrm:P131_isIdentifiedBy ?F22_Self_Contained_Expression_COMPOSER_NAME.
22
23 }
24 ORDER BY (?P79_beginning_isQualified_by)
```

Access original file : [https://drive.google.com/open?id=0BwopBdic2\\_jUN2k4SDNSU2hWWmM](https://drive.google.com/open?id=0BwopBdic2_jUN2k4SDNSU2hWWmM)

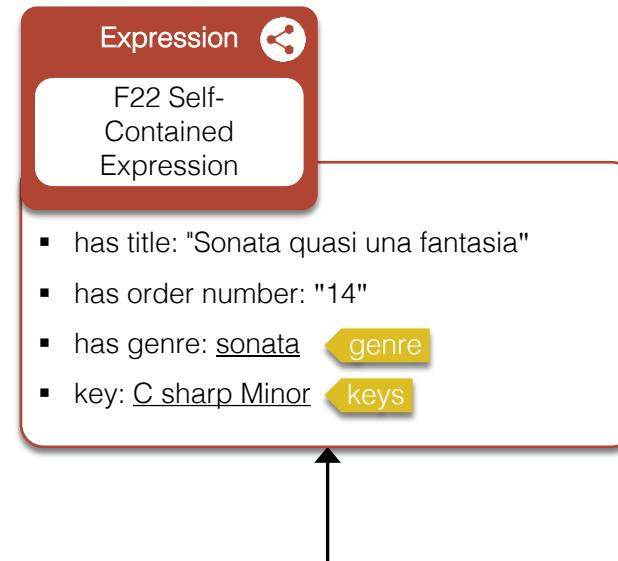
## Extract of results

F30_Publication_Event	F22_Self_Contained_Expression_TITLE	F22_Self_Contained_Expression_COMPOSER_NAME	P79_beginning_isQualified_by	P80_end_isQualified_by	callret-5
<a href="http://data.doremus.org/event/9068b290-e5e5-36ca-a356-357a5c8ebda3">http://data.doremus.org/event/9068b290-e5e5-36ca-a356-357a5c8ebda3</a>	"Quatuors"@fr	"Beethoven, Ludwig van (1770-1827)"	1801-01-01	1801-12-31	Vienne
<a href="http://data.doremus.org/event/b97aded1-ca6f-3f46-a0ee-825a8b76e767">http://data.doremus.org/event/b97aded1-ca6f-3f46-a0ee-825a8b76e767</a>	"Sonates"@fr	"Beethoven, Ludwig van (1770-1827)"	1801-01-01	1801-12-31	Vienne
<a href="http://data.doremus.org/event/501405d5-1162-334e-9851-c2f053eac8b2">http://data.doremus.org/event/501405d5-1162-334e-9851-c2f053eac8b2</a>	"L'amant malheureux et constant"@fr	"Ferrari, Giacomo Gotifredo (1763-1842)"	1802-01-01	1802-12-31	Vienne
<a href="http://data.doremus.org/event/710622e8-43ba-37a8-8420-ed91e246924a">http://data.doremus.org/event/710622e8-43ba-37a8-8420-ed91e246924a</a>	"Variations"@fr	"Gelinek, Josef (1758-1825)"	1802-01-01	1802-12-31	Vienne
<a href="http://data.doremus.org/event/e874fd6e-ad7c-3052-9305-938805c14d9d">http://data.doremus.org/event/e874fd6e-ad7c-3052-9305-938805c14d9d</a>	"Fantaisies"@fr	"Mozart, Wolfgang Amadeus (1756-1791)"	1802-01-01	1802-12-31	Vienne

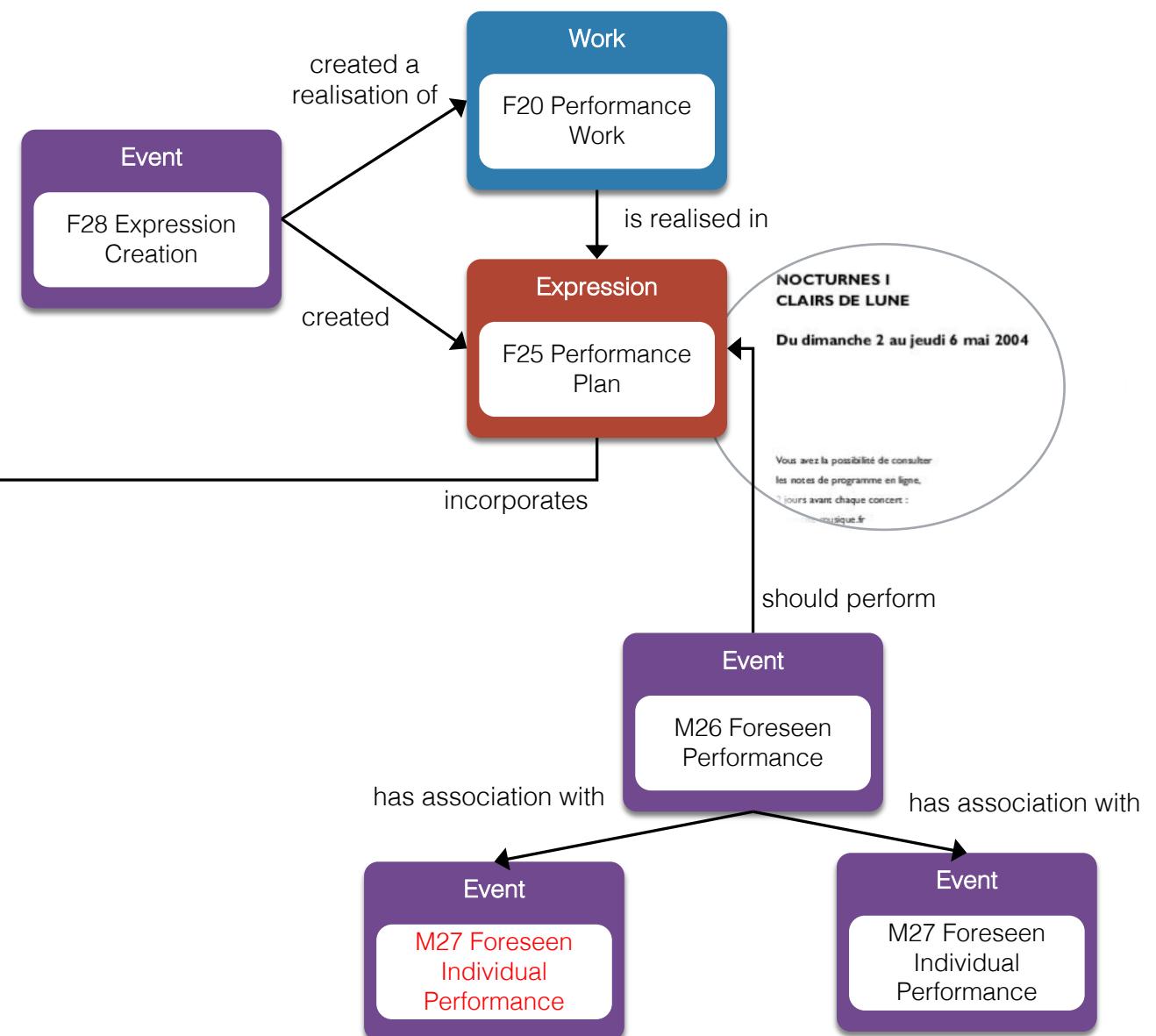
# Data model overview

## Concert programming

Composition of *Sonata quasi una fantasia* by Beethoven



Publication of concert program :  
2nd to 6th May 2004  
Concert Nocturne 1 Clairs de lune at Philharmonie of Paris

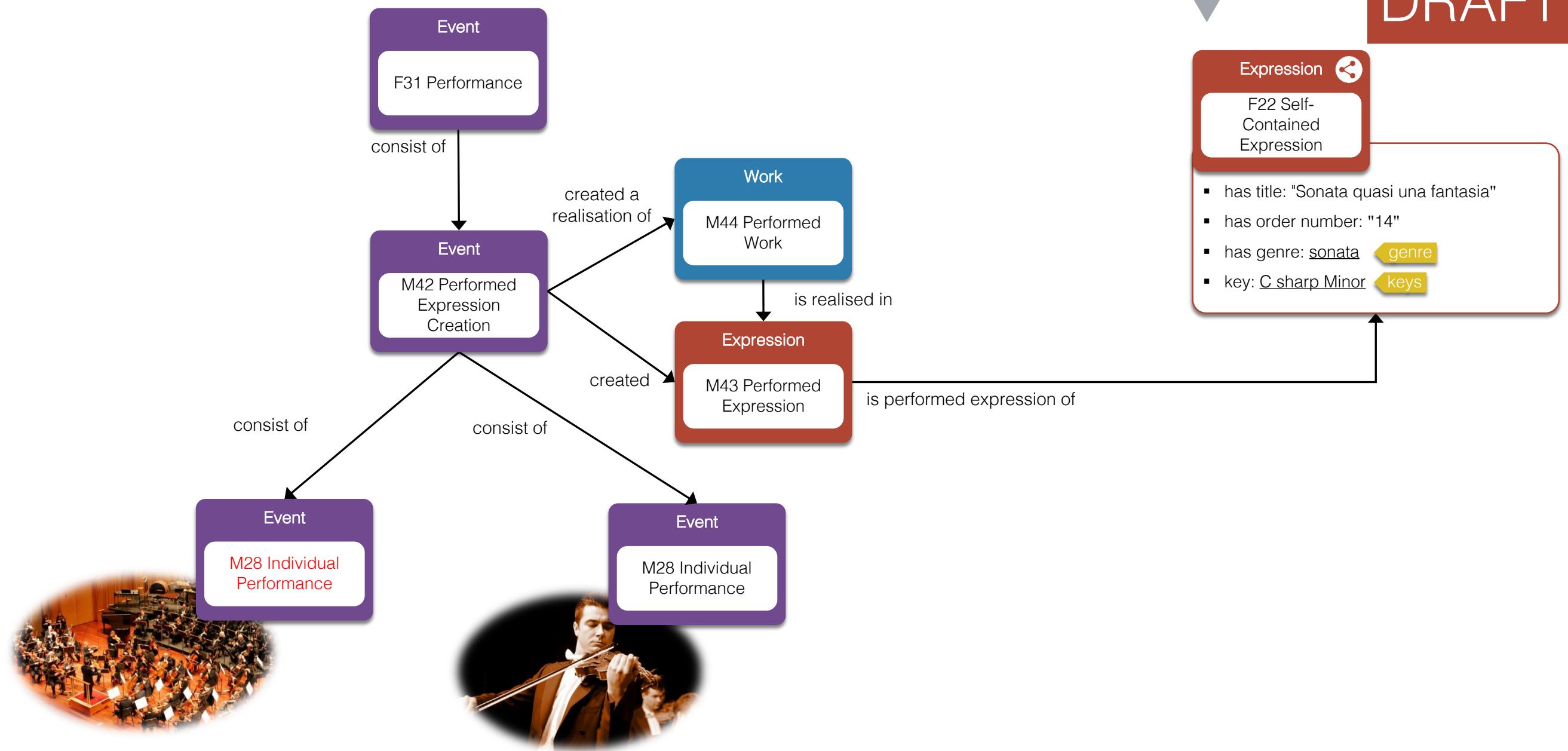


DRAFT

# Data model overview

## Musical performance

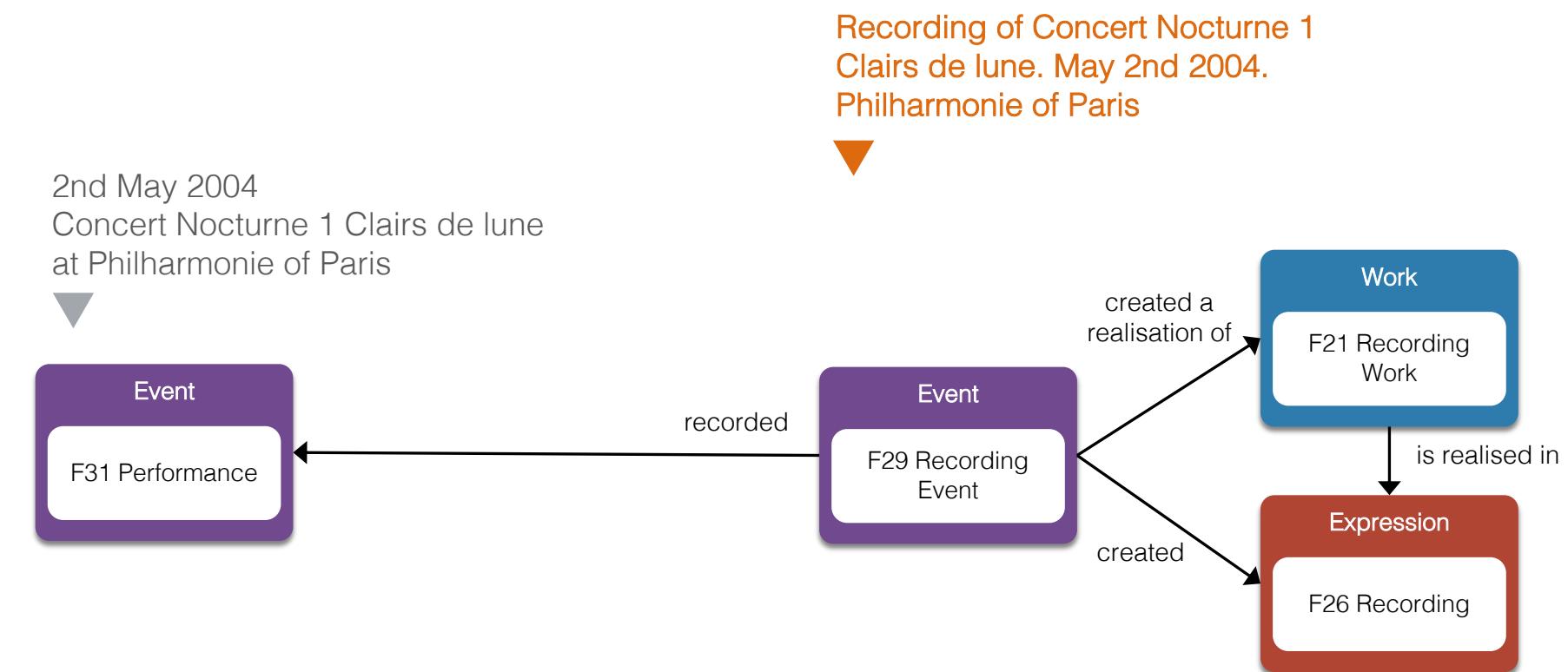
2nd May 2004  
 Concert Nocturne 1 Clairs de lune  
 at Philharmonie of Paris



# Data model overview

## Performance recording

DRAFT



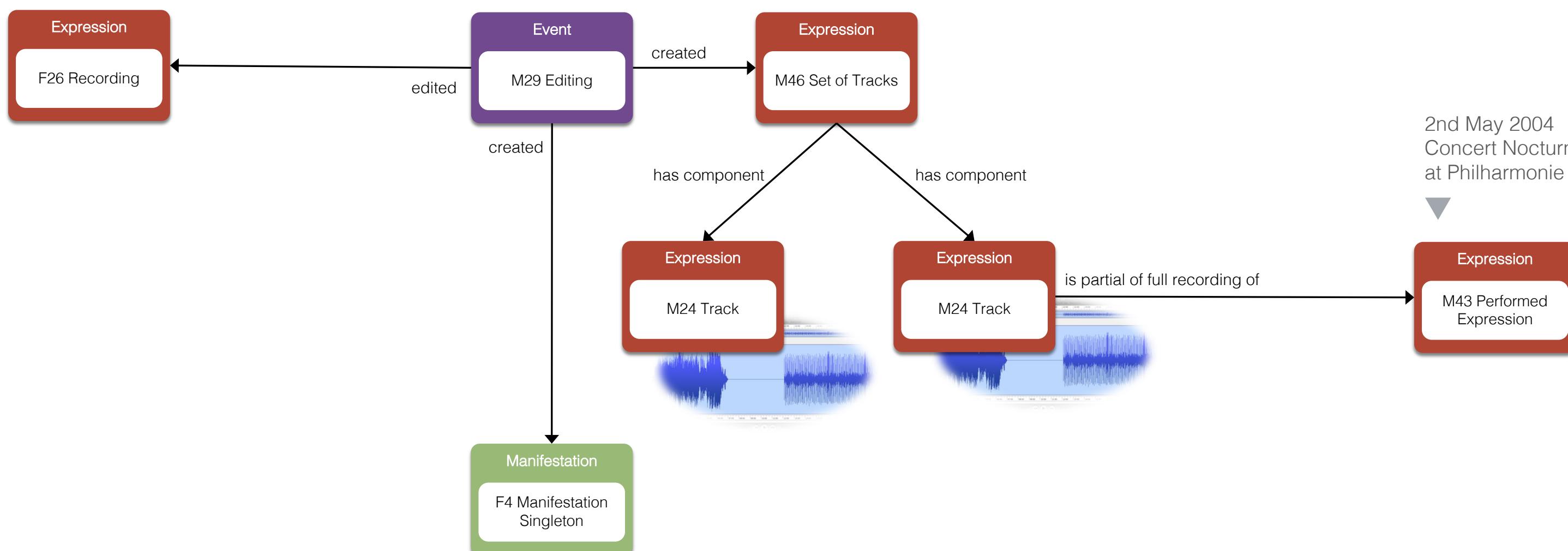
# Data model overview

## Editing tracks

DRAFT

Recording of Concert Nocturne 1  
 Clairs de lune. May 2nd 2004.  
 Philharmonie of Paris

**Editing tracks of Recording of Concert  
 Nocturne 1 Clairs de lune. May 2nd  
 2004. Philharmonie of Paris**

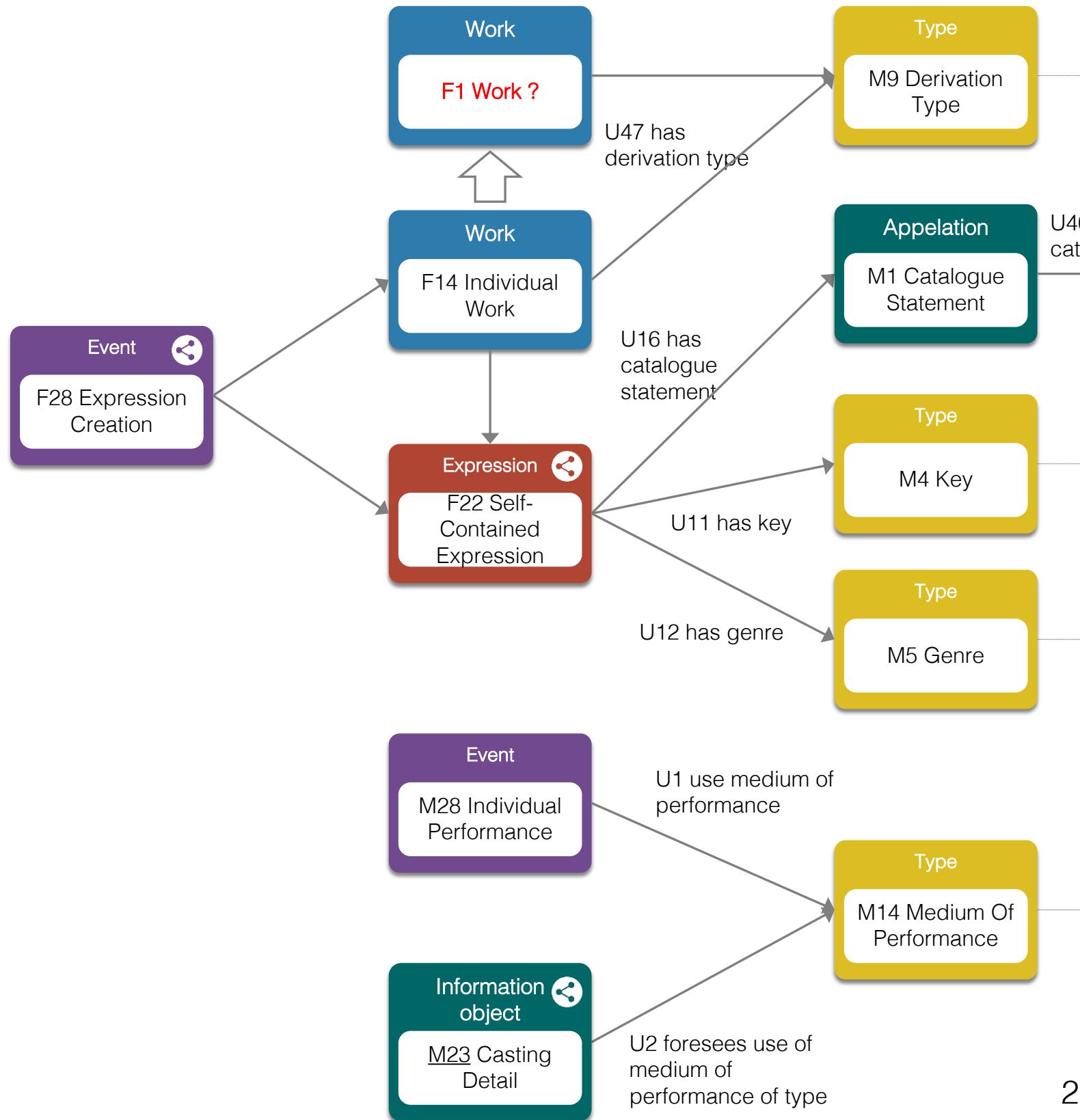


2nd May 2004  
 Concert Nocturne 1 Clairs de lune  
 at Philharmonie of Paris

# Controlled vocabularies

# Controlled vocabularies

## Overview



## Controlled vocabularies

derivation



catalogue



key



genre



medium of performance



# Controlled vocabularies

## List of keys

### Summary description

URI	<a href="http://data.doremus.org/vocabulary/key/">http://data.doremus.org/vocabulary/key/</a>
Title	List of keys
Creator	doremus.org
Description	The sum of relations, melodic and harmonic, existing between the tones of a scale or musical system
Created	2016-09-01
Conforms	<a href="#">SKOS</a>
License	
Language	English, French, Deutsch, Italian, Spanish
DOREMUS usages	<ul style="list-style-type: none"> <li>▪ Equivalent class: M4 Key</li> <li>▪ Used for: U11 key (in class F22 Self-Contained Expression)</li> </ul>

### Alignment

IFLA	Key of musical work <a href="http://iflastandards.info/ns/unimarc/terms/key#">http://iflastandards.info/ns/unimarc/terms/key#</a>
------	--

### Some english values label

[D Minor](#)  
[D flat Major](#)  
[D Major](#)  
[E flat Minor](#)  
[F sharp Major](#)  
[E Major](#)  
[E Minor](#)  
[A Major](#)  
[C flat Major](#)  
...

### Distribution

SPARQL	<a href="http://data.doremus.org/sparql">http://data.doremus.org/sparql</a>
CSV	À préciser
RDF	À préciser

# Controlled vocabularies

## List of keys

QUERY : Find all musical works in C sharp Minor

```

1  SELECT ?title ?key (SAMPLE(?composerName) AS ?composerName)
2
3  WHERE {
4    ?F22_Self_Created_Expression mus:U11_has_key <http://data.doremus.org/vocabulary/key/c>;
5        mus:U70_has_title ?title.
6
7    <http://data.doremus.org/vocabulary/key/c> skos:prefLabel ?key.
8    FILTER (lang(?key)="en")
9
10   OPTIONAL {
11     ?F28_Expression_Creation efrbroo:R17_created ?F22_Self_Created_Expression;
12     ecrm:P9_consists_of/ecrm:P14_carried_out_by/ecrm:P131_is_identified_by ?composerName.
13   }
14 }
15 LIMIT 100

```

Access original file : [https://drive.google.com/open?id=0BwopBdic2\\_jUSGVPT2hrT3pLZjg](https://drive.google.com/open?id=0BwopBdic2_jUSGVPT2hrT3pLZjg)

Extract of results

<b>title</b>	<b>key</b>	<b>composerName</b>
"Toccatas   Toccata, arpeggio, fuga"@fr	"C Major"@en	"Scarlatti, Alessandro (1660-1725)"
"Gavotte"	"C Major"@en	"Dedieu, Paul (18..-1899)"
"Fuge über ein Thema von Tomaso Albinoni"	"C Major"@en	"Bach, Johann Sebastian (1685-1750)"
"Air varié"	"C Major"@en	"Sor, Fernando (1778-1839)"
"Missa sancti Joannis Nepomuceni"@la	"C Major"@en	"Haydn, Michael (1737-1806)"
"Si, si, luci adorate"	"C Major"@en	"Vivaldi, Antonio (1678-1741)"

# Controlled vocabularies

## List of types of derivation

### Summary description

URI	<a href="http://data.doremus.org/vocabulary/derivation/">http://data.doremus.org/vocabulary/derivation/</a>
Title	List of types of derivation
Creator	doremus.org
Description	List of derivation links between two works
Created	2016-09-01
Conforms	<a href="#">SKOS</a>
License	
Language	English, French, Deutsch, Italian, Spanish
DOREMUS usages	<ul style="list-style-type: none"> <li>▪ Equivalent class: M9 Derivation Type</li> <li>▪ Used for: U47 has derivation type (class E89 Propositional Object)</li> </ul>

### Some english values label

[Fantasy](#)  
[Orchestration](#)  
[Reharmonization](#)  
[Transcription](#)  
[Variation](#)  
[Reconstruction](#)  
[Harmonization](#)  
[Medley](#)  
[Reorchestration](#)  
...

### Alignment

--	--

### Distribution

SPARQL	<a href="http://data.doremus.org/sparql">http://data.doremus.org/sparql</a>
CSV	À préciser
RDF	À préciser

# Controlled vocabularies

## List of modes

### Summary description

URI	<a href="http://data.doremus.org/vocabulary/mode/">http://data.doremus.org/vocabulary/mode/</a>
Title	List of modes
Creator	doremus.org
Description	Mode generally refers to a type of scale, coupled with a set of characteristic melodic behaviours
Created	2016-09-01
Conforms	<a href="#">SKOS</a>
License	
Language	English, French
DOREMUS usages	<ul style="list-style-type: none"> <li>▪ Equivalent class: M22 Mode <span style="color: red;">À préciser</span></li> <li>▪ Used for: U22 has mode (class F22 Self-Contained Expression) <span style="color: red;">À préciser</span></li> </ul>

### Alignment

--	--

### Some english values label

modern musical scales

dorian mode

mixolydian mode

...

western church modes

lydian mode

aeolian mode

...

...

### Distribution

SPARQL	<a href="http://data.doremus.org/sparql">http://data.doremus.org/sparql</a>
CSV	<span style="color: red;">À préciser</span>
RDF	<span style="color: red;">À préciser</span>

# Controlled vocabularies

## List of genres

### Summary description

URI	<a href="http://data.doremus.org/vocabulary/iaml/genre/">http://data.doremus.org/vocabulary/iaml/genre/</a>
Title	List of musical genres
Creator	iaml.info
Description	À préciser
Created	À préciser
Conforms	<a href="#">SKOS</a>
License	À préciser
Language	English, French, Deutsch, Italian
DOREMUS usages	<ul style="list-style-type: none"> <li>▪ Equivalent class: M5 Genre</li> <li>▪ Used for: U12 has genre (class F22 Self-Contained Expression)</li> </ul>

### Some english values label

[byzantine canon](#)  
[children's song](#)  
[foxtrot](#)  
[fugue](#)  
[folie](#)  
[forlana](#)  
[galop](#)  
[hard rock](#)  
...

### Alignment

IFLA	The form of a musical work <a href="http://iflastandards.info/ns/unimarc/terms/fom/">http://iflastandards.info/ns/unimarc/terms/fom/</a>
BNF	Rameau À préciser

### Distribution

SPARQL	<a href="http://data.doremus.org/sparql">http://data.doremus.org/sparql</a>
CSV	À préciser
RDF	À préciser

# Controlled vocabularies

## Use of genres in DOREMUS datasets

