

Search User Interface proposal for Subject Repositories: DSpace implementation for WindMusic.org

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Table of Content

Context.....	1
WindMusic.org.....	2
Resources discovery.....	2
Thesaurus and authority lists: controlled vocabularies.....	3
Query Reformulation patterns.....	4
WindMusic implementation.....	4
1. browse categories or indexes to discover the overall content and structure of the database.....	5
2. formulate a query: specialized search boxes with menus or terms auto-completion.....	6
3. remove the necessity of reformulating queries to take into account synonyms, translations and generic versus specific concepts (the search for the general can include its specifics).....	7
4. browse search query results looking without disruption to individual record to discover typical documents, possible authors, terminology, abstracts.....	8
5. pick interesting resources for later in depth review.....	10
6.1 easily add criteria to make a query more specific.....	11
Adding multiple criteria in a single step.....	13
6.2. easily remove any search criteria.....	14
Bibliography.....	14

Context

Subject repositories are targeting exhaustivity within a domain. They want to be a central source of information for researchers: they tend to be very large. Those repositories also require precise indexing and controlled multilingual vocabulary for efficient retrieval of documents answering the explicit and tacit interests of the researcher.

After presenting in Göteborg (DSUG 2009, Sweden) how we integrate thesauri and authority lists (organized along the W3C SKOS standard) into DSpace, we present to DSUG 2011 what discovery tools are now available for the users of WindMusic.org.

We hope that this presentation will be felt very practical and that it will spring ideas and discussions for potential evolutions of DSpace.

WindMusic.org

The CDMC (Conseil Départemental de Musique et de Culture de Haute Alsace = Upper Alsace Council for Music and Culture) is an organization supported by public founding since 1969. It promotes the cultural production (music, dance and theatre) of the Département of Upper Alsace. The CIM (CDMC Music Information Centre) provides the trainees, teachers, musicians and conductors a **structured information tool** targeted to the needs of Wind Orchestras and Bands: WindMusic.org.

Many types of resources are available: from encyclopedias to CD-ROMs, with periodicals, monographs, but mainly scores (with about 34.000 items) and audio recordings (with about 30.000 items). WindMusic is multilingual: French, German and English.

This computer based catalog allows visitors to discover full scores of interesting works and, in the CDMC library, to listen directly their recordings with headphones on multimedia stations (Audio recordings are only available within the CIM to respect publishers' copyright).

WindMusic was been re-implemented in 2008 using DSpace and a whole set of functions to manage and take advantage of SKOS standard (authority lists and thesauri).

Working for the CDMC and for the Belgium Poison Centre, DESTIN provided the development services necessary for this realization. These results are there to share in projects with the DSpace community.

Resources discovery

Searching within a domain is a process where a person takes an authoritative source, gives some clues about her/his needs and learns about the related database content before digging further. Formulating and reformulating queries, interesting resources are hopefully gathered.

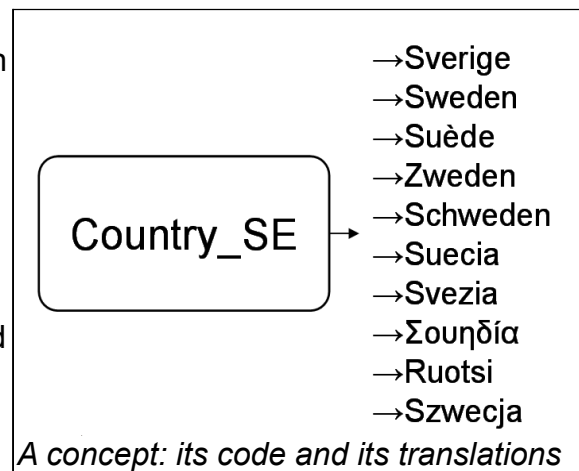
Tools are therefore necessary to:

1. browse categories or indexes (possible search criteria) to discover the overall content and structure of the database,
2. formulate a query:
 1. "à la Google" search box,
 2. using specialized search boxes with menus or terms auto-completion.
3. search taking into accounts synonyms, translations, generic versus specific concepts (the search for the general can include its specifics). This removes the necessity of reformulating queries. Controlled vocabularies, automated query expansion...
4. browse search results looking (without disruption) to individual record to discover typical documents, possible authors, terminology, abstracts...
5. pick interesting resources for later in depth review:
 1. add / remove resources from the pick list,
 2. save, print or export the pick list in different bibliographical references formats.
6. improve a query with easy to make reformulations:
 1. add criteria to make the query more specific,
 2. remove criteria to make the query more general.

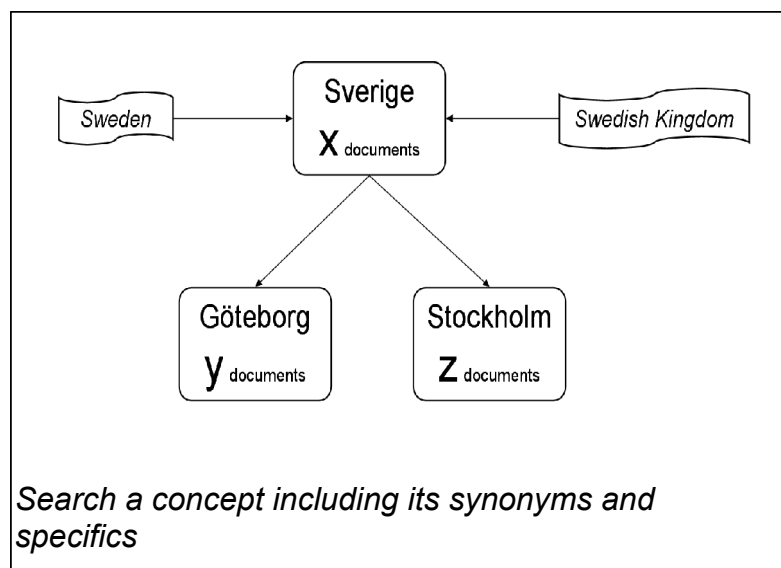
Thesaurus and authority lists: controlled vocabularies...

On the road to build this collection of tools, we already tackled many issues related to terminology (SKOS thesauri addition to DSpace presented at DSUG 2009):

- indexation is based on “concepts”, each concept being identified as a code stored in the database;
- concepts can be retrieved using their names in different languages or synonyms;
- menus or auto-completion input boxes assist the user when choosing a concept;
- concepts' usage statistics are gathered and displayed to help users discriminate between frequent and rare concepts;



- concepts can be put in hierarchies going from generic to specific: retrieval may include a concept and all its specific (underlying) concepts:



- The metadata update form has also been overhauled to take advantage of controlled vocabularies:

Language :	English language_en	= X +
↑↑	Author	=
Author :	<input type="radio"/> All <input checked="" type="radio"/> People+ <input type="radio"/> Orchestra+ LENNON, John Anthony personne_290	= X
Composer	<input type="radio"/> All <input checked="" type="radio"/> People+ <input type="radio"/> Orchestra+ MCCARTNEY, Paul personne_291	= X
Composer	<input type="radio"/> All <input type="radio"/> People+ <input checked="" type="radio"/> Orchestra+ BEATLES orchestre_19277	= X +

Query Reformulation patterns

Below, we use the DSpace syntax for queries (implied AND):

- **A B C** means: term-A AND term-B AND term-C
- **A (B OR C)** means: term-A AND (term-B OR term-C)

Liu and Gwizdka in “*Analysis of query reformulation types on different search tasks*” have estimated the frequency of the different ways a user may reformulate her/his search queries. From their results, we can draw the following table:

<i>Liu& Gwizdka Code</i>	<i>Reformulating Query A B C into Queries like:</i>	<i>Frequ- ency</i>	<i>Operation</i>
G	A B, B C or A C	15%	Delete some criteria
GR	A X, B X or C X	12%	Delete some criteria, add some but less
S	A B C X	20%	Add some criteria
SR	A B X Y, B C X Y or A C X Y	12%	Replace some criteria and add some more
WR	A B X, A X C or X B C	19%	Replace some criteria
REPEAT	A B C, A C B, B C A, B A C, C A B or C B A	4%	Query unchanged
R2	Reformulation using synonyms	5%	
N	Unrelated new query	13%	
		100%	

- Unrelated new queries are only 13%: the support for incremental query formulation is essential.
- Indexing expansion with Thesauri Synonyms relieves users from about 5% of the reformulation needs.
- Adding criteria is necessary in **GR**, **S**, **SR** and **WR**: 63% of the reformulations (80% of the non trivial cases). Faceted browsing of search results is a well accepted tool for this.

When multiple criteria are added at once, it remains to be studied what are the relative frequencies for:

1. A B C (X OR Y OR Z)
 2. A B C X Y Z
 3. other combinations of AND, OR, NOT Boolean operators
- Deleting criteria is necessary in **G**, **GR**, **SR** and **WR**: 58% of the reformulations (74% of the non trivial cases). Little buttons to delete specific parts of a query is a straightforward way to do this.

We tried to adapt the DSpace search user interface to fulfill these needs.

WindMusic implementation

We implemented different tools for the main functionalities identified for Resources Discovery:





1. browse categories or indexes to discover the overall content and structure of the database

Main categories:

Communities and Collections

Shown below is a list of communities and the collections and a name to view that community or collection home page.


■ 1. Wind Music Scores

-  1.1. Concert Band Scores [18931]
-  1.2. "Batterie-Fanfare" Scores [1176]
-  1.3. Big Band Scores [947]
-  1.4. Other Scores (Fanfare Band, Brass Band) [608]




■ 2. Wind Music Recordings

-  2.1. Concert Band Recordings [25548]
-  2.2. "Batterie-Fanfare" Recordings [1611]
-  2.3. Big Band Recordings [549]
-  2.4. Other Recordings [2264]





■ 3. Ensembles

-  3.1. Scores [1429]
-  3.2. Recordings [836]

■ 4. Solo and Educational Works

-  4.1. Solo Works [10165]
-  4.2. Educational Works [1172]
-  4.3. Children's Operas [78]

■ 5. Other Resources















-  5.1. Books [1346]
-  5.2. CD [3482]
-  5.3. Audio-visual (Videotapes, DVD) [12]
-  5.4. CD-ROM [13]

■ 6. Around Musical Works

-  6.1. Authors (Biographies) [19630]
-  6.2. Publishers [1950]
-  6.3. Orchestra [1664]
-  6.4. Keywords (index) [1019]
-  6.5. Series [1634]

(number of linked resources)

Subject Index:

- + ☐ Music (61866)
 - + ☐ Ensemble (32914)
 - + ☐ Epoch (1179)
 - + ☐ Music playing (206)
 - + ☐ Music style (16559)
 - + ☐ Musical creation (175)
 - + ☐ Musical events (89)
 - + ☐ Musical genre (26533)
 - + ☐ Musical writing (54686)
 - + ☐ Score (1439)
- + ☐ Music instruments (16667)
 - + ☐ Electroacoustic (28)
 - + ☐ Keyboards (739)
 - + ☐ Percussions (1951)
 - + ☐ Strings (3277)
 - + ☐ Voice (722)
 - + ☐ Winds (11394)
- + ☐ Performing arts (5519)
 -  ☐ Cinema (83)
 - + ☐ Circus (206)
 - + ☐ DANSE (5126)
 -  ☐ Incidental music (8)
 - + ☐ Mime (4)
 -  ☐ Musical-theatre (10)
 - + ☐ Performing arts (67)
 -  ☐ Puppet theatre (1)
 - + ☐ Theatre (132)
- + ☐ Period (56176)
 -  ☐ 11th century (2)
 -  ☐ 12th century (11)
 -  ☐ 13th century (9)
 -  ☐ 14th century (12)
 -  ☐ 15th century (18)
 -  ☐ 16th century (258)
 -  ☐ 17th century (624)
 -  ☐ 18th century (1814)
 -  ☐ 19th century (4217)
 - + ☐ 20th century (33461)
 -  ☐ 21st century (16212)

2. formulate a query: specialized search boxes with menus or terms auto-completion..

Scores

Title:	<input type="text"/>
Author:	<input type="text"/>
Country:	<input type="text"/>
Publishers:	<input type="text"/>
Keywords:	<input type="text" value="bugl"/>
	<div style="border: 1px solid #ccc; padding: 2px; margin-top: 2px;"> <div style="background-color: #e0e0e0; padding: 2px;">Boogie woogie ⇐(es)Bugui-bugui (72)</div> <div style="padding: 2px;">Bugle (262)</div> <div style="padding: 2px;">Eb Flugelhorn ⇐Bugle mib (2)</div> <div style="padding: 2px;">Flugel horn ⇐(fr)BUGLE (206)</div> </div>
	<div style="border: 1px solid #ccc; padding: 2px; margin-top: 2px;"> <div style="background-color: #e0e0e0; padding: 2px;">AND</div> <div style="padding: 2px;">AND</div> </div>
Orchestres:	<input type="text"/>
Choeurs:	<input type="text"/>
Voix:	<div style="border: 1px solid #ccc; padding: 2px; margin-top: 2px;"> <div style="background-color: #e0e0e0; padding: 2px;">Mixed choir (511)</div> <div style="padding: 2px;">Unison choir (14)</div> <div style="padding: 2px;">Children's choir (119)</div> <div style="padding: 2px;">Women's chor (15)</div> <div style="padding: 2px;">Men's choir (67)</div> <div style="padding: 2px;">A capella choir (7)</div> <div style="padding: 2px;">Amateur choir (2)</div> <div style="padding: 2px;">Spoken choir (2)</div> <div style="padding: 2px;">Choir</div> <div style="padding: 2px;">Vocal group (13)</div> <div style="padding: 2px;">Religious ensemble (7)</div> <div style="padding: 2px;">Other choirs</div> </div>
Solistes:	<input type="text"/>
Nb.Solistes:	<input type="text"/>
Duration:	<input type="text"/>
Level:	<input type="text"/>
Recent Submissions:	<input type="text"/>
<input type="button" value="Search"/>	

DSpace Advanced Search with auto-completion varying along chosen index field:

Search:

Operation	Index	
	<input type="text" value="Composer/Performer"/>	<input type="text" value="LENNON, John Anthony ⇐Beatles (69)"/>
<div>OR</div>	<input type="text" value="Composer/Performer"/>	<input type="text" value="bea"/>
<div>AND</div>	<div>Every field</div>	<div style="border: 1px solid #ccc; padding: 2px; margin-top: 2px;"> <div style="background-color: #e0e0e0; padding: 2px;">BARRET, Roland ⇐Beach Boys (9)</div> <div style="padding: 2px;">BEACH BOYS (THE) (2)</div> <div style="padding: 2px;">BEACH, Bennie</div> <div style="padding: 2px;">BEACH, Doug (59)</div> <div style="padding: 2px;">BEACH, Reb</div> </div>
<div>AND</div>	<div style="border: 1px solid #ccc; padding: 2px; margin-top: 2px;"> <div style="padding: 2px;">Every field</div> <div style="padding: 2px;">Title</div> <div style="padding: 2px;">Composer/Performer</div> <div style="padding: 2px;">Performer</div> <div style="background-color: #e0e0e0; padding: 2px;">Nationality</div> <div style="padding: 2px;">Orchestra</div> <div style="padding: 2px;">Keyword</div> <div style="padding: 2px;">Specific keyword</div> <div style="padding: 2px;">Abstract</div> <div style="padding: 2px;">Solo instruments</div> <div style="padding: 2px;">Ensembles</div> <div style="padding: 2px;">Voices</div> <div style="padding: 2px;">Instrument</div> <div style="padding: 2px;">Level</div> <div style="padding: 2px;">Score Type</div> <div style="padding: 2px;">Language</div> <div style="padding: 2px;">Publisher</div> <div style="padding: 2px;">Collection</div> <div style="padding: 2px;">Identifier</div> <div style="padding: 2px;">Issued(yyyy-mm-dd*)</div> <div style="padding: 2px;">Available(yyyy-mm-dd*)</div> </div>	
<input type="checkbox"/> Orchestre	Orchestra	
<input type="checkbox"/> Orchestre	Keyword	
<input type="checkbox"/> Batterie	Specific keyword	
	Abstract	
	Solo instruments	
	Ensembles	
	Voices	
	Instrument	
	Level	
	Score Type	
	Language	
	Publisher	
	Collection	
	Identifier	
	Issued(yyyy-mm-dd*)	
	Available(yyyy-mm-dd*)	
<input type="button" value="Search"/>		

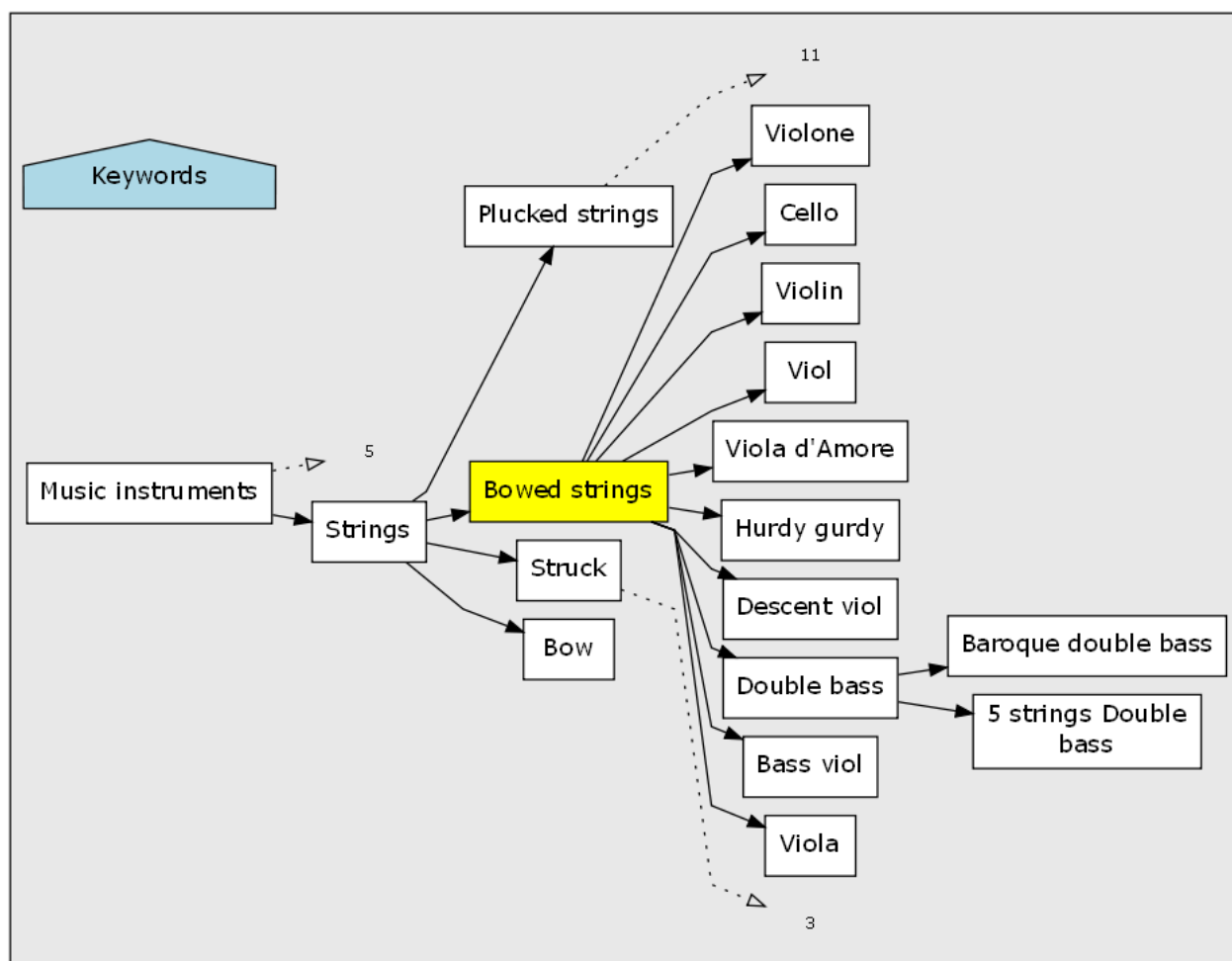
Arrangement ☐

Instrumentation variable

3. remove the necessity of reformulating queries to take into account synonyms, translations and generic versus specific concepts (the search for the general can include its specifics)

“Bowed Strings” is mentioned in 70 references but, with its specifics, it is linked to 1219 references:

Bowed strings	70	1219	CORDES FROTTEES	70	1219
Bass viol	1	1	ALTO	231	231
Cello	340	340	BASSE DE VIOLE	1	1
Descent viol			CONTREBASSE	172	173
Double bass	172	173	CONTREBASSE 5 CORDES	1	1
5 strings Double bass	1	1	CONTREBASSE BAROQUE		
Baroque double bass			DESSUS DE VIOLE		



Concept sujet_21963 (displayed using ASKOSI.org)

Spanish, French, English, German and Dutch translations:

es	Acompañamiento
fr	ACCOMPAGNEMENT
en	Accompaniment
de	Begleitung
nl	Begeleiding
	conjunto

Word search can be done using any synonym or any translation defined for a concept in the SKOS thesaurus.

4. browse search query results looking without disruption to individual record to discover typical documents, possible authors, terminology, abstracts...

Clicking the title of resource within a search result:

author: LENNON, John Anthony_x OR author: BARRET, Roland_x

Results 1-78 of 78.

↑Newly Available Date issued Composer Call Number Title Similarity				
n°	Newly Available	Title	Author	Type
1	2011-03-08	Get back	Composer:LENNON, John Anthony	Wind band - Full score
<div> <div>Title: Get back <small>Smil.</small></div> <div> <div>Type: Wind band - Full score ▶16441</div> <div>Language: English ▶27896</div> <div>Composer: LENNON, John Anthony ▶69</div> <div>Composer: MCCARTNEY, Paul ▶59</div> <div>Arranger: VINSON, Johnnie ▶59</div> </div> <div> <div>Abstract: fr Get Back est une des dernières chansons des Beatles avant leur séparation. Elle figure parmi les plus grands succès commerciaux du groupe. Let's rock !</div> </div> <div> <div>Level: level 2 ▶5559</div> <div>Orchestras: Young band 1 ▶3192</div> <div>Publisher: Hal Leonard ▶716 ◀803</div> <div>Place of publication: United States</div> <div>Issue date: 2011</div> <div>Collection: Hal Leonard Discovery Band Series 71</div> <div>Publisher Reference: 08725302</div> <div>Description: 7 p.</div> <div>Duration: 00:01:55</div> <div>CIM Call Number: 210.1J *A*</div> <div>Appears in Collections: 1.1. Concert Band Scores</div> </div> </div>				
[96315]				
2	2010-09-13	Best of the Beatles	Composer:LENNON, John Anthony	Wind band - Full score
3	2010-07-05	Abbey Road : A symphonic portrait	Composer:LENNON, John Anthony	Wind band - Full score
4	2010-07-05	The Beatles : 1964!	Composer:LENNON, John Anthony	Wind band - Full score

Item display is presented within the search result

Clicking on another title:

author: LENNON, John Anthony_x OR author: BARRET, Roland_x

Results 1-78 of 78.

↑Newly Available						Date issued	Composer	Call Number	Title	Similarity
n°	Newly Available	Title				Author			Type	
1	2011-03-08	Get back					Composer:LENNON, John Anthony		Wind band - Full score	
2	2010-09-13	Best of the Beatles					Composer:LENNON, John Anthony		Wind band - Full score	

Title: Best of the Beatles Smil.

Additional Title: Le meilleur des Beatles Smil.

Contents list: Ticket to Ride - Hey Jude - Get back

Type: Wind band - Full score ▶▶16441

Language: English ▶▶27896

Composer: LENNON, John Anthony ▶▶69

Composer: MCCARTNEY, Paul ▶▶59

Arranger: MOSS, John ▶▶81 ▶▶1

Level: level 2 ▶▶5559

Orchestras: Concert band 1 ▶▶42575

Additional instruments: Glockenspiel 1 ▶▶33 ▶▶13 sol.

Note about instrumentation: Instrumentation variable à 5 voix et percussions.

Publisher: Hal Leonard ▶▶716 ▶▶803

Place of publication: United States

Issue date: 2010

Collection: Flex-Band Series ▶▶23

Publisher Reference: 04002952

Description: 19 p.

Duration: 00:04:00

CIM Call Number: 210.1V *A*

Appears in Collections: 1.1. Concert Band Scores


[94154]

3	2010-07-05	Abbey Road : A symphonic portrait		Composer:LENNON, John Anthony	Wind band - Full score
4	2010-07-05	The Beatles : 1964!		Composer:LENNON, John Anthony	Wind band - Full score

- Clicking on a title, the user receives the record display inside the current search result. Clicking the title again hides the record display.
- Clicking on any other title, the previous record is hidden and the new one is inserted.
- Database maintainers can still click on the number at the left of each line to display the record in a separate web page.

This removes most disruptions when inspecting the records within a search result.


5. pick interesting resources for later in depth review


Items 2 and 4 has been clicked and added to the “caddy”  :


author:  LENNON, John Anthony_x OR author:  BARRET, Roland_x

Results 1-78 of 78.

2







[↑Newly Available](#)











[Date issued](#)

[Composer](#)





[Call Number](#)

[Title](#)

[Similarity](#)

nº	Newly Available	Title	Author	Type
1 	2011-03-08	Get back	 Composer:LENNON, John Anthony	Wind band - Full score
2 	2010-09-13	Best of the Beatles	 Composer:LENNON, John Anthony	Wind band - Full score
3 	2010-07-05	Abbey Road : A symphonic portrait	 Composer:LENNON, John Anthony	Wind band - Full score
4 	2010-07-05	The Beatles : 1964!	 Composer:LENNON, John Anthony	Wind band - Full score
5 	2010-05-17	Eleanor Rigdy	 Composer:LENNON, John Anthony	Recording

These two items can be:

- removed from the caddy (clicking again on each item caddy or  canceling the whole caddy content)
-  printed
-  put in a separate search result for:
 - sorting:  Newly Available Date issued Composer Call Number Title
 - export in different bibliographic format (HTML, Wiki, Text)
 - batch update using Excel.

simple (biblio/)	HTML	Export
simple (biblio/)	HTML	
vancouver (biblio/)	TXT	
	WIKI	
	CSV	
	TSV	
	XML	

6.1 easily add criteria to make a query more specific


(Liu & Gwidzka codes **GR**, **S**, **SR** and **WR**: 80% of the non trivial cases)

Faceting panel is added to every search result. It sorts all the controlled vocabulary used by the different records in the result and it offers different options to create a new query.

In WindMusic, faceting is done along many search criteria:

1. Composers
2. Performers (same authority lists than Composer, different role)
3. Documents types
4. Keywords
5. Publishers
6. Difficulty levels for the performer
7. Instruments
8. Solo instruments (same vocabulary, different role)
9. Collections, serials
10. Languages

In this example, we only see the faceting done for performers. If we only wish to examine records done by four orchestras we prefer, we can select them (5 records by Tokyo Kosei Wind Orchestra, 4 by the Philharmonic Wind Orchestra, 2 by the Northern Winds and 1 by The London Wind Orchestra) and then click the funnel button.

If we prefer to see the list in alphabetical order, we press the button  and obtain this:

69		47
1	<input type="checkbox"/>	Brassband St. Cecilia Hombeek
1	<input type="checkbox"/>	Fanfare des carabiniers de S.A.S le Prince de Monaco
3	<input type="checkbox"/>	Fiatinsieme
1	<input type="checkbox"/>	IMI Yorkshire Imperial Band (The)
1	<input type="checkbox"/>	Massed Bands of the Royal Air Force (The)
2	<input checked="" type="checkbox"/>	Northern Winds
4	<input checked="" type="checkbox"/>	Philharmonic Wind Orchestra
1	<input type="checkbox"/>	Stadtkapelle Offenburg
5	<input checked="" type="checkbox"/>	Tokyo Kosei Wind Orchestra

69		47
6	<input type="checkbox"/>	REIFT, Marc
5	<input checked="" type="checkbox"/>	Tokyo Kosei Wind Orchestra
4	<input checked="" type="checkbox"/>	Philharmonic Wind Orchestra
	<input type="checkbox"/>	Fiatinsieme
3	<input type="checkbox"/>	IWAI, Naohiro
	<input type="checkbox"/>	TONETTI, Enea
	<input checked="" type="checkbox"/>	Northern Winds
2	<input type="checkbox"/>	HAAN (DE), Jan
	<input type="checkbox"/>	Band of the Belgian Navy
	<input type="checkbox"/>	Brassband St. Cecilia Hombeek
	<input type="checkbox"/>	Central Band of the Royal Air Force
	<input type="checkbox"/>	Daniel Speer Trombone Consort
	<input type="checkbox"/>	Ensemble pro Brass
	<input type="checkbox"/>	Fanfare des carabiniers de S.A.S le Prince de Monaco
1	<input type="checkbox"/>	German Brass
	<input type="checkbox"/>	IMI Yorkshire Imperial Band (The)
	<input type="checkbox"/>	JJB Sports Leyland Band
	<input type="checkbox"/>	Johan Willem Friso Military Band (J.W.F.)
	<input type="checkbox"/>	Koninklijke Harmonie van Peer
	<input checked="" type="checkbox"/>	London Wind Orchestra (The)
	<input type="checkbox"/>	Marc Reift Orchestra
   +26 ...		

Any concept listed in the faceting panel can be clicked. For instance, with Keyword “Symphonic band”:

31		Imagine		Composer:LENNON, John Anthony	Recording
32		Imagine		Composer:LENNON, John Anthony	Recording
33		Imagine		Composer:LENNON, John Anthony	Recording
34		Imagine		Auth Anth	
35		Let it be		Com Anth	
36		Michelle		Com Anth	
37		Michelle		Auth Anth	
38		Norwegian wood		Com Anth	
39		Norwegian Woodn't		Composer:Grieg, Edvard Hagerup	Wind band Full score
40		Norwegian woodn't : Morgenstimmung (Morning song) from Peer Gynt		Composer:GRIEG, Edvard Hagerup	Recording
41		Ob-la-di Ob-la-da		Composer:LENNON, John Anthony	Recording

69

NOT:44 AND:25 OR:23060

Symphonic band

23016

69 42

63 Arrangement

40 International light music

38 Twentieth century second

25 **Symphonic band**

22 20th century

19 Pop music

18 Song

15 England

7 Rock

6 Ballade

Christmas

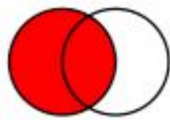
5 Potpourri

4 21st century

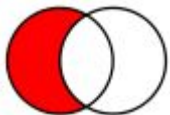
+29 ...

69 15

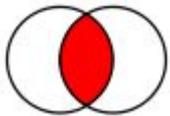
1. Records in the result for a “Symphonic band” are immediately highlighted: you can look at them, they will be displayed in place, no disruption.
2. A pop-up menu offers Boolean operations:



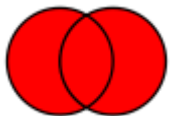
Current result size (69) is reminded near the magnifying glass.



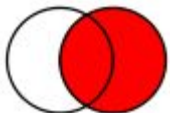
NOT: Current result NOT “Symphonic band” will give 44 records.



AND: Current result AND “Symphonic band” will give 25 records.



OR: Current result OR “Symphonic band” will give 23060 records.



“Symphonic band” alone will give 23016 records.

3. Just click another concept to explore other possible results...

Adding multiple criteria in a single step

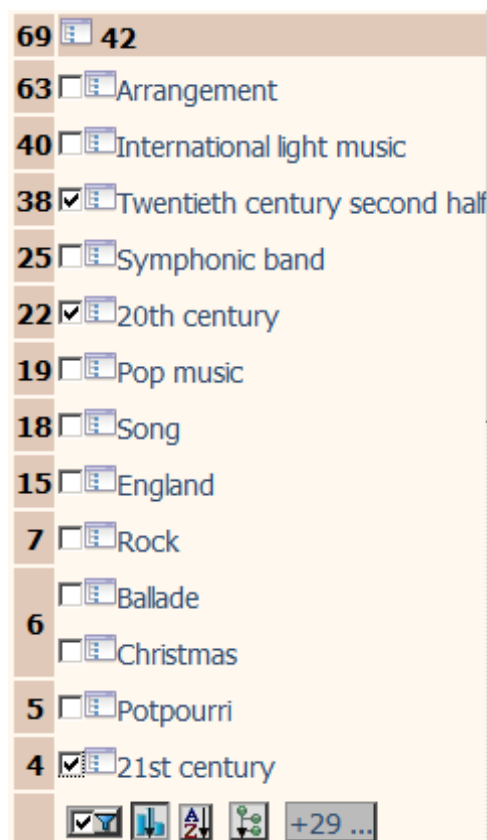
It was shown above how multiple orchestras could be selected. The resulting query is:

composer: LENNON, John Anthony_x AND performer: (London Wind Orchestra (The)_x OR Tokyo Kosei Wind Orchestra_x OR Philharmonic Wind Orchestra_x OR Northern Winds_x)

Results 1-12 of 12.

This shows that adding criteria “X Y Z” (all from the same facet) to a query “A B C” creates a query: **A B C (X OR Y OR Z)**

We could have selected the orchestras but also some keywords (for instance, keywords indicating the century):



This generates a longer query:

author: LENNON, John Anthony_x AND keyword: (21st century_x OR 20th century_x OR Twentieth century second half_x) AND performer: (London Wind Orchestra (The)_x OR Tokyo Kosei Wind Orchestra_x OR Philharmonic Wind Orchestra_x OR Northern Winds_x)

This shows that adding criteria “X1 Y1 Z1” and “X2 Y2 Z2” (from two different facets) creates a query: **A B C (X1 OR Y1 OR Z1) (X2 OR Y2 OR Z2)**

- Logical AND between the previous query and between different facets,
- Logical OR between the concepts within a same facet.

6.2. easily remove any search criteria

(Liu & Gwizdka codes **G**, **GR**, **SR** and **WR**: 74% of the non trivial cases)

The search query is presented like this:

author:  LENNON, John Anthony  OR author:  BARRET, Roland 

Clicking the little red “x” after *LENNON, John Anthony* removes that criteria from the query.
The new result is:

author:  BARRET, Roland 

Résultats 1 à 9 sur un total de 9.

	↑Nouveauté	Date de publication	Compositeur	Cote	Titre	Ressemblance
n°	Nouveauté		Titre		Auteur	Type
1 	2010-03-07		Final impact 		Compositeur:BARRET, Roland	Orchestre à vent - Orchestration Complète
2 	2009-02-16		St. Thomas 		Compositeur:ROLLINS, Sonny	Orchestre à vent - Orchestration Complète
3 	2009-02-16		Night Train 		-	Orchestre à vent - Orchestration Complète
4 	2009-02-16		Of Dark Lords and Ancient Kings 		Auteur:BARRET, Roland	Orchestre à vent - Orchestration Complète
5 	2009-02-16		Festival Sinfonia 		Auteur:BARRET, Roland	Orchestre à vent - Orchestration Complète
6 	2009-01-05		Of Dark Lords and Ancient Kings 		Compositeur:BARRET, Roland	Oeuvre sur CD
7 	2009-01-05		On the Winds of the Chosen 		Compositeur:BARRET, Roland	Oeuvre sur CD
8 	2009-01-05		Of Dark Lords and Ancient Kings 		Compositeur:BARRET, Roland	Oeuvre sur CD
9 	2009-01-05		Fanfare and Dance Segments 		Compositeur:BARRET, Roland	Orchestre à vent - Orchestration Complète

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