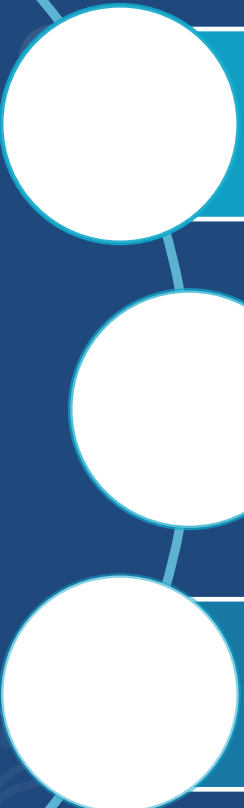
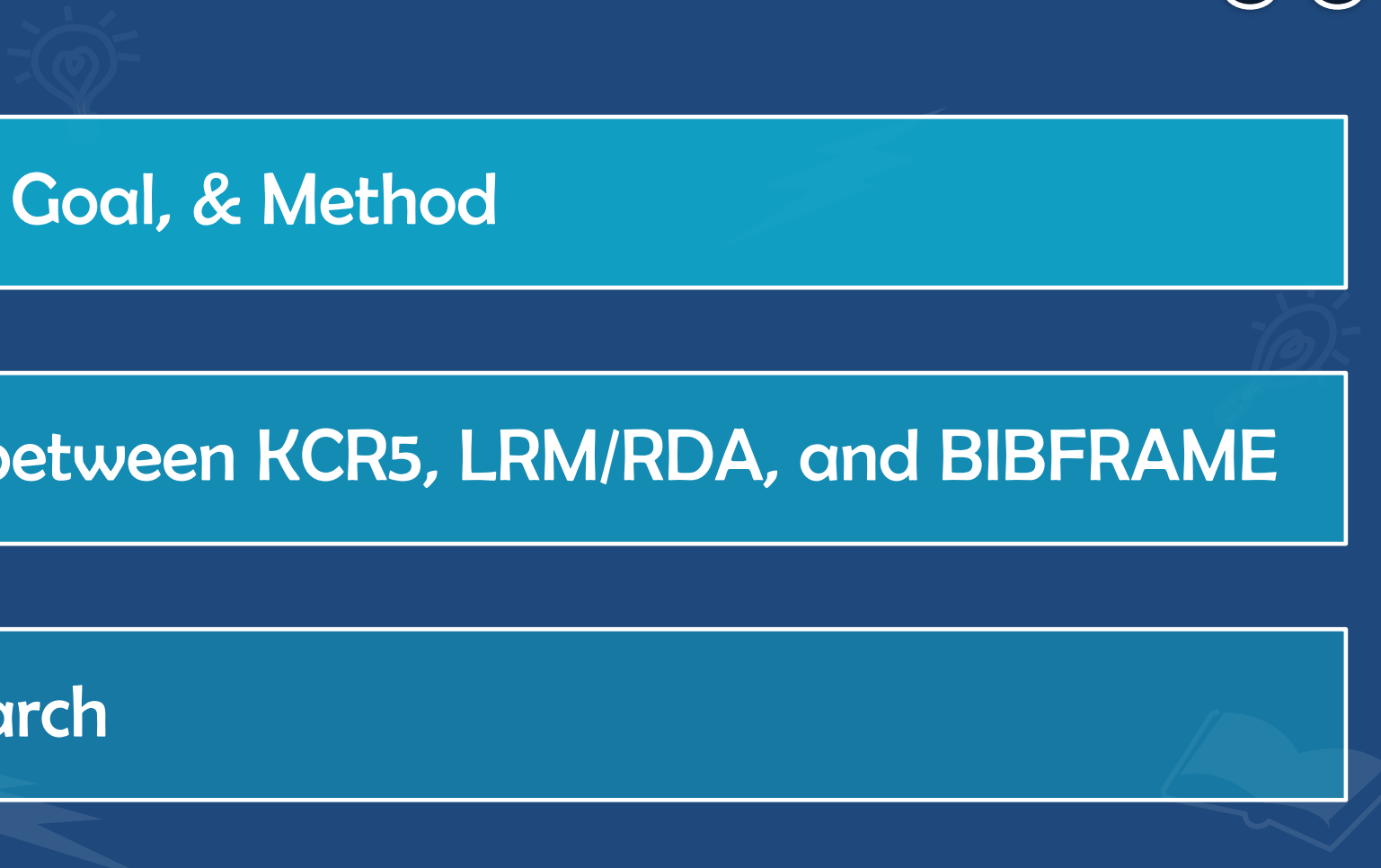




Mapping KCR5 as content rules to BIBFRAME

- Mihwa Lee (Kongju National University)
- Jee-Hyun Rho (Pusan National University)
- Eun-Ju Lee (Dong-eui University)

content



1. Background, Goal, & Method

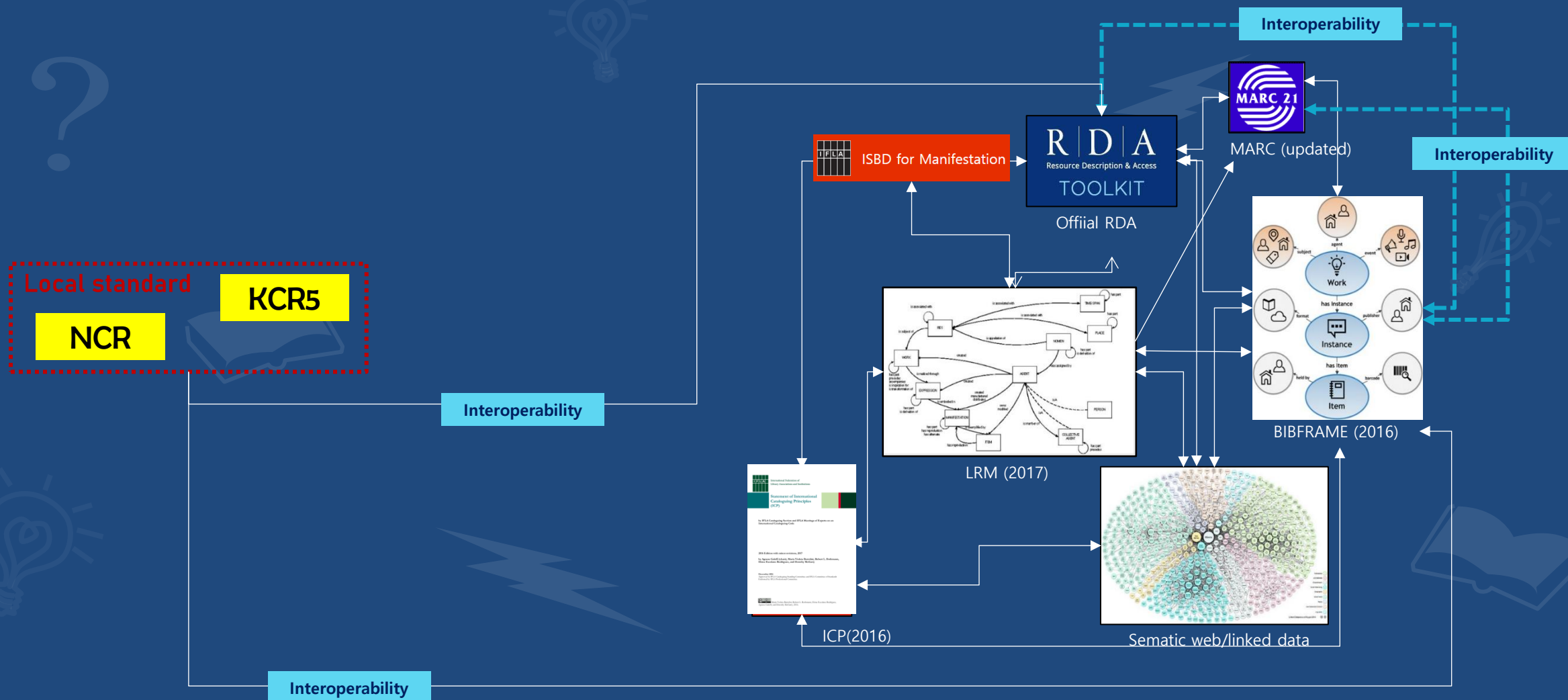
2. Mapping between KCR5, LRM/RDA, and BIBFRAME

3. Future Research



Background, Goal, & Method

Interoperability between standards



<Revision of standards>

KCR5(Korean Cataloging Classification, 5th ed.)

Newly developed KCR5 in 2025

Based on **ISBD, FRBR, ICP, and original RDA** + Korean cataloging environment

Three section - description / access point / relationship

Entities - WEMI, P/F/C **without concept, object, event, place**

Interoperability for exchange and sharing of Korean cataloging data in KCR5
mapping KCR5 to official RDA, BIBFRAME

Goal

Evaluate interoperability for the exchange and sharing of bibliographic data in KCR5

- Mapping analysis by comparing the entities and attributes of KCR5, the official RDA as content rules, and BIBFRAME as an encoding format

Conceptual model comparison

- LRM
- Official RDA model based on LRM
- BIBFRAME data model
- KCR5

Properties mapping

- Element Name & Definition
- Focusing on element of work and expression

Methods and Process

Comparing LRM attributes with official RDA attributes

Review the entity and attribute definitions of the official RDA and BIBFRAME

Entity and attribute mapping between KCR5 and official RDA/BIBFRAME

Mapping BIBFRAME to official RDA according to LRM categories

Proceed by identifying official RDA and BIBFRAME corresponding entities and attributes in KCR5



Mapping between KCR5, LRM/RDA, and BIBFRAME

Conceptual model comparison

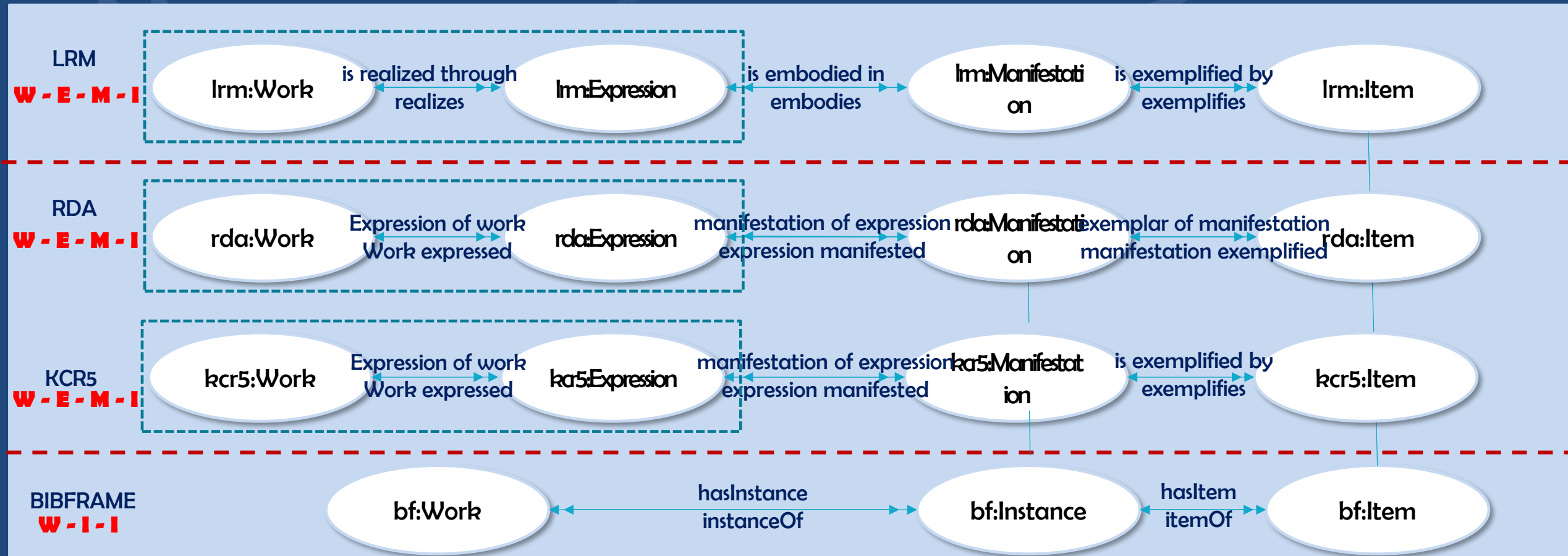
Entities comparison

LRM	Official RDA	KCR5	BIBFRAME			
			This study	Oliveira, et al.(2023)	Seikel & Steele(2020)	Taniguchi(2017)
Res	RDA Entity		-	Subject, Event	-	-
Work	Work	Work	Work	Work	Work	Work
Expression	Expression	Expression	Work	-	Work	Work
Manifestation	Manifestation	Manifestation	Instance	Instance	Instance	Instance
Item	Item	Item	Item	Item	Item	Item
Agent	Agent	-	Agent	Agent	Agent	Agent
Person	Person	Person	Person	-	Person	-
Collective Agent	Family Corporate Body	Family Corporate Body	Family Organization Jurisdiction Meeting	-	-	Family Organization Jurisdiction Meeting
Place	Place	-	Place	-	Place	Place
Timespan	Timespan	-	Temporal	-	Temporal	Temporal
Nomen	Nomen	-		-	-	Title, Identifier

<Entities comparison of LRM, RDA, BIBFRAME >

Conceptual model comparison

Entities comparison



Properties mapping



- Property mapping in semantic equivalence
 - property mapping of res, work, and expression in semantic equivalence without considering domains and ranges
 - Incorporating domains and ranges into the mapping would result in complex mapping structure. In particular, differences in the entity models—the absence of a separate expression entity in BIBFRAME—make it more difficult to map properties that are constrained by specific domains and ranges



Properties mapping – Res

	LRM	KCR5	Official RDA	BIBFRAME
Attributes	Category of res	-	category of RDA entity	-
	Note	-	note on RDA entity	
relationship	has appellation is appellation of	-	appellation of RDA entity access point for RDA entity authorized access point for RDA entity variant access point for RDA entity name of RDA entity preferred name of RDA entity variant name of RDA entity identifier for RDA entity	-
	is associated with has association with	-	(A)related entity of RDA entity related a/p/f/ca/cb of RDA entity related work of RDA entity related expression of RDA entity related manifestation of RDA entity related item of RDA entity related nomen of RDA entity related RDA entity of RDA entity related place of RDA entity related timespan of RDA entity	-
	is subject of has as subject	-	RDA entity critiqued by RDA entity described by RDA entity described with metadata by RDA entity evaluated by RDA entity reviewed by subject RDA entity of	-

Properties mapping – Work - attributes

LRM	KCR5	Official RDA	KCR5
Category	academic degree form of work - - coverage of content declination - - latitude longitude right ascension year degree granted coordinates of cartographic content epoch equinox longitude and latitude right ascension and declination ≡coordinates of cartographic content	academic degree category of work collection accrual method collection accrual policy coverage of content declination extension plan frequency latitude longitude right ascension (R)year degree granted (R)coordinates of cartographic content (R)epoch (R)equinox (R)longitude and latitude (R)right ascension and declination (R)strings of coordinate pairs	bf:degree, bf:dissertation bf:Work-subclass bf:custodialHistory - bf:temporalCoverage bf:ascensionAndDeclination - bf:frequency - - bf:ascensionAndDeclination bf:date bf:coordinates - bf:equinox - bf:ascensionAndDeclination bf:coordinates
Representative expression attribute	≡other distinguishing characteristic of the work ≡other distinguishing characteristic of the work ≡other distinguishing characteristic of the work ≡other distinguishing characteristic of the work ≡other distinguishing characteristic of the work intended audience key ≡other distinguishing characteristic of the work ≡other distinguishing characteristic of the work Medium of performance ≡other distinguishing characteristic of the work ≡other distinguishing characteristic of the work ≡other distinguishing characteristic of the work ≡other distinguishing characteristic of the work ≡other distinguishing characteristic of the work ≡other distinguishing characteristic of the work ≡other distinguishing characteristic of the work	aspect ratio of representative expression colour content of representative expression content type of representative expression duration of representative expression extent of representative expression intended audience of representative expression key of representative expression language of representative expression medium of performance of choreographic content of representative expression medium of performance of musical content of representative expression projection of cartographic content of representative expression scale of representative expression script of representative expression sound content of representative expression (R)date of capture of representative expression (R)date of representative expression (R)place of capture of representative expression	bf:aspectRatio bf:colorContent bf:content bf:duration bf:extent bf:intendedAudience bf:keyMode bf:language bf:musicMedium bf:mediumOfPerformance bf:projection bf:scale bf:Script bf:soundContent bf:date bf:date bf:place

Properties mapping – Work - attributes

LRM	KCR5	Official RDA	KCR5
Note	dissertation or thesis information history of work nature of content - note on work - - system of organization	dissertation or thesis information history of work nature of content note on metadata work note on work recording source scope of validity system of organization	bf:degree, bf:dissertation bf:historyOfWork bf:natureOfContent bf:adminMetadata bf:note bf:source - -

Properties mapping – Work – relationship

LRM	KCR5	Official RDA	BIBFRAME
has appellation /is appellation of	- ≡ access point for work (A) access point for work (A) authorized access point for work (A) variant access point for work ≡ (A) access point for work ≡ (A) authorized access point for work (A) title of work (A) preferred title of work (A) variant title of work (A) identifier for work ≡ (A) identifier for work (A)(M) ISSN (A)(M) key title (A) numeric designation of musical work (A) opus number (A) serial number of musical work (A) thematic index number	(A) numbering of part - appellation of work - access point for work - authorized access point for work - variant access point for work - appellation of work group - authorized access point for work group - title of work - preferred title of work - variant title of work - identifier for work - identifier for work group - ISSN - key title - numeric designation of musical work - opus number - serial number of musical work - thematic index number	- partNumber - - - - - - - bf:title - - bf:VariantTitle - bf:identifies - bf:identifies - bf:identifies - bf:title - - bf:musicOpusNumber - bf:musicSerialNumber - bf:musicThematicNumber
is associated with	- - - commemoration/commemoration of - Concordance/concordance to (A) date of work - hosting institution - index for - manifestation of work (A) Place of origin of the work - related work of work -	- binding of item of - binding of manifestation of - commemoration/commemoration of - concordance work for - date of work - hosting institution - index for - manifestation of work - place of origin of work - related work of work - source consulted	- - - - - bf:date - - bf:index - bf:hasInstance - bf:originDate - -

Properties mapping – Work – relationship

LRM	KCR5	Official RDA	BIBFRAME
accompanies /is accompanied complements /complemented by	addenda to work/addenda work appendix to work/appendix work augmentation of work/augmented by work cadenza composed for work/cadenza work choreography for work/choreography work complemented by work	addenda to work/addenda work appendix to work/appendix work augmentation of work/augmented by work cadenza composed for work/cadenza work choreography for work/choreography work complemented by work	bf:accompaniedBy/accompanies bf:accompaniedBy/accompanies bf:accompaniedBy/accompanies bf:accompaniedBy/accompanies bf:accompaniedBy/accompanies
was transformed into/is a transformation of	abridged as work/abridgement of work absorbed by work/absorption of work adaptation of work/adapted as work	abridged as work/abridgement of work absorbed by work/absorption of work adaptation of work/adapted as work	bf:hasDerivative/derivativeOf bf:absorbed/absorbedBy bf:hasDerivative/derivativeOf
is inspiration for /is inspired by	inspiration for/inspired by - -	inspiration for/inspired by issue/issue of special issue/special issue of	- - -
has part/is part of	Contained in/container of Subseries of/subseries	part of work/part work subseries/subseries of	bf:hasPart/partOf bf:hasPart/partOf
precedes/succeeds	Prequel/prequel to	prequel work/sequel work	bf:precededBy/succeededBy
is realized through	expression of work/work expressed -	expression of /work expressed representative expression	bf:expressionOf, hasExpression -
was created by	appellant appellee architect artist audio producer author book artist calligrapher cartographer of work casting director choreographer	appellant cb/p appellee cb/p architect a/ca/cb/f/p artist a/ca/cb/f/p audio producer a/ca/cb/f/p author a/ca/cb/f/p book artist a/ca/cb/f/p calligrapher a/ca/cb/f/p cartographer a/ca/cb/f/p of work casting director a/ca/cb/f/p choreographer a/ca/cb/f/p	bf:contribution + role

Properties mapping – Work – relationship

LRM	KCR5	Official RDA	BIBFRAME
is subject of/has as subject	-	analysis of w/e/m/i catalogue of commentary on w/e/m/i critique of w/e/m critique of RDA entity work analysed in work commentary in work critiqued by work described by work described with metadata by work evaluated by work reviewed by finding aid of	bf:subject bf:subject bf:subject bf:subject bf:subject bf:subject bf:subject bf:subject bf:subject bf:subject bf:subject bf:subject bf:subject bf:subject bf:subject bf:findingAid/findingAidOf

Properties mapping – Expression – Attributes

LRM	KCR5	Official RDA	BIBFRAME
expression category	aspect ratio designation award - colour content type form of musical notation form of notated movement form of notation form of tactile notation format of notated music - - projection of cartographic content - scale form of notation-script	aspect ratio designation award category of expression colour content type form of musical notation form of notated movement form of notation form of tactile notation format of notated music interactivity mode prime meridian projection of cartographic content relief representation scale designation script	bf:aspectRatio bf:awards bf:Work-subclass bf:colorContent bf:content bf:notation bf:notation bf:notation bf:notation bf:notation - - bf:projection bf:relief bf:scale bf:Script (class)
work category	-	medium of performance of choreographic content	-
note	scale place and date of capture other distinguishing characteristic of the expression (recording details) details of cartographic content (recording details) (recording details) (recording details) (recording details) (recording details) (recording details) note on capture ≡note on expression note on expression summarization of content	additional scale information capture information designation of version details of aspect ratio designation details of cartographic content details of duration details of form of musical notation details of notated movement details of tactile notation details of notated music details of script note on capture note on changes in content characteristics note on expression summarization of content	bf:note bf:capture bf:edition bf:note + noteType bf:note + noteType bf:note + noteType bf:note + noteType bf:note + noteType bf:note + noteType bf:note + noteType bf:note + noteType bf:note + noteType bf:note + noteType bf:note + noteType bf:note + noteType bf:note + noteType

Properties mapping – Expression – Attributes




LRM	KCR5	Official RDA	BIBFRAME
extent	aspect ratio duration - scale scale of still image or three-dimensional form	aspect ratio duration extent of expression scale scale of still image or three-dimensional form	bf:aspectRatio bf:duration bf:extent bf:scale bf:scale
intended audience	-	intended audience of expression	bf:intendedAudience
use rights	-	-	bf:usageAndAccessPolicy
cartographic scale	horizontal scale of cartographic content vertical scale of cartographic content	horizontal scale of cartographic content vertical scale of cartographic content	bf:scale bf:scale
language	language of expression	language of expression	bf:language
key	(W) key of expression	key of expression	bf:key
medium of performance	medium of performance of musical content	medium of performance of musical content	bf:musicMedium



Properties mapping – Expression – Attributes

LRM	KCR5	Official RDA	BIBFRAME
has appellation /is appellation of	≡access point for expression access point for expression authorized access point for expression variant access point for expression - - identifier for expression	appellation of expression access point for expression authorized access point for expression variant access point for expression title of expression preferred title of expression variant title of expression identifier for expression	- - - - bf:title bf:title bf:VariantTitle bf:identifies
is associated with /has association with	abridged as expression/abridgement of expression absorbed by expression/absorption of expression abstracted in expression/abstracts for expression adaptation of expression/adapted as expression	abridged as expression/abridgement of expression absorbed by expression/absorption of expression abstracted in expression/abstracts for expression adaptation of expression/adapted as expression	bf:hasDerivative/derivativeOf bf:absorbed/absorbedBy bf:hasDerivative/derivativeOf bf:hasDerivative/derivativeOf
has derivation /is derivation of	arranged as/arrangement of derivative expression/source expression dubbed version/dubbed version of replaced by expression/replacement of expression revised as/revision of translated as/translation of	arranged as/arrangement of derivative expression/source expression dubbed version/dubbed version of replaced by expression/replacement of expression revised as/revision of translated as/translation of	bf:arrangement/arrangementOf bf:hasDerivative/derivativeOf bf:translation/translationOf bf:replacementOf/replacedBy bf:replacementOf/replacedBy bf:translation/translationOf
has part /is part of	part expression/part of expression	part expression/part of expression	bf:hasPart/partOf
aggregated /was aggregated by	-	aggregated by/aggregates	bf:associatedResource - bf:Hub(class)
realized /is realized through	- work expressed	representative expression of work expressed	bf:hasExpression/expressionOf bf:hasExpression/expressionOf
is embodied in /embodies	manifestation of expression	manifestation of expression	bf:hasInstance/instanceOf

Properties mapping – Expression - Attributes

LRM	KCR5	Official RDA	BIBFRAME
was created by/created	abridger actor animator arranger of music art director audio engineer censor choral conductor colourist commentator conductor block cutter annotator (hyeonto) illustrator cartoonist surveyor	abridger a/ca/cb/f/p actor a/ca/cb/f/p animator a/ca/cb/f/p arranger a/ca/cb/f/p of music art director a/ca/cb/f/p audio engineer a/ca/cb/f/p censor a/ca/cb/f/p choral conductor a/ca/cb/f/p colourist a/ca/cb/f/p commentator a/ca/cb/f/p conductor a/ca/cb/f/p - - - - -	bf:contribution + role
is subject of/has as subject	-	expression analysed in expression commentary in expression critiqued by expression described by expression described with metadata by expression evaluated by expression of derivative work expression of source work expression reviewed by subject expression of	bf:subject



Future research

Developing properties for KCR5

○ Work

○ Attributes

- extension plan, frequency, and representative expression

○ Relation attributes

- Work to work

<Table> relationship type

KCR5	Official RDA
Derivation	Inspiration
	Transformation
Commemoration	Commemoration
Whole-part	Part of
Accompany	Complement
	Augmentation
Preceded/succeeded	Prequel/sequel
-	Subject

○ Expression

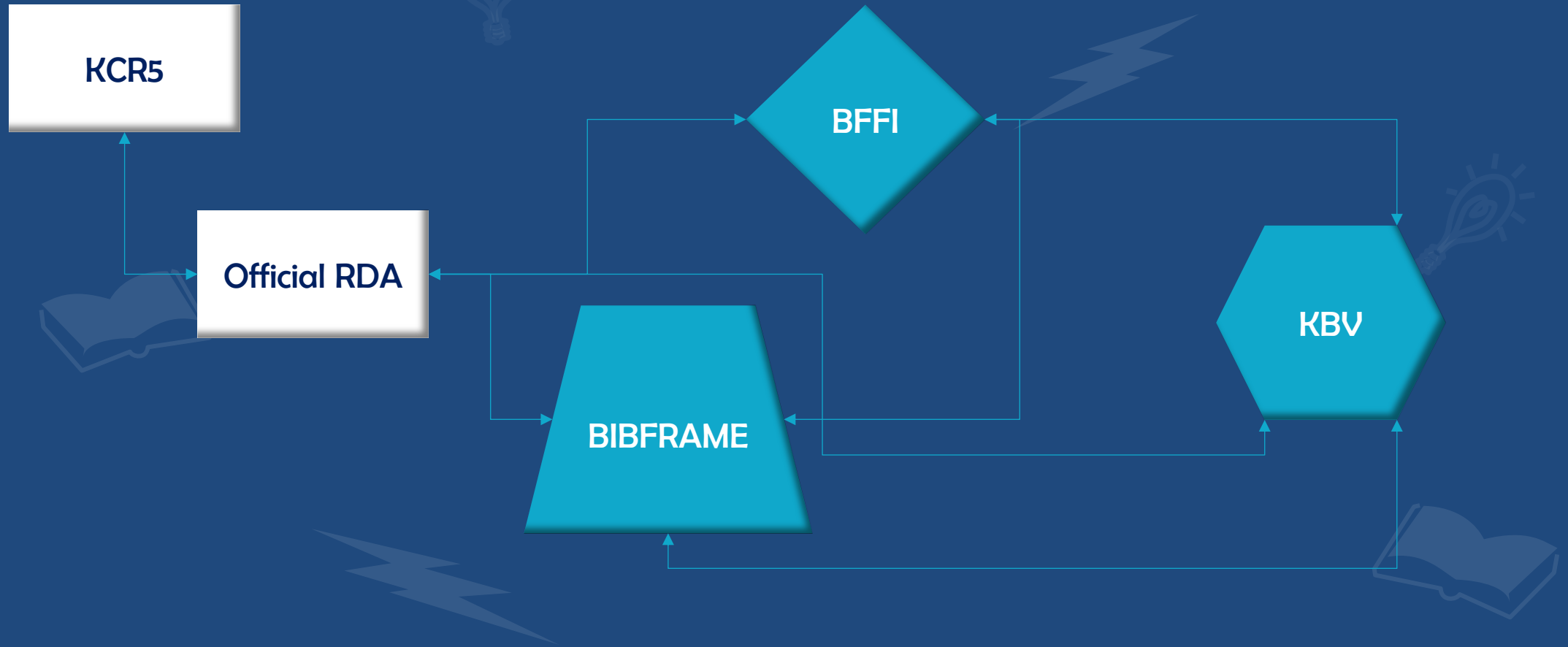
○ Attributes

- expression category, mode of interactivity, prime meridian, relief representation, and intended audience for expression.

○ Relation attributes

- aggregated by/aggregates, concordance work

Mapping with other ontology





Thanks



Comments and questions to e-mail (leemh@kongju.ac.kr)

