

## Formalizing a CERIF Semantics to connect CRISs and IRs

*Brigitte Jörg*

German Research Center for Artificial Intelligence (DFKI GmbH)

[brigitte.joerg@dfki.de](mailto:brigitte.joerg@dfki.de)

The Common European Research Information Format (CERIF) is a formal data model to represent entities involved in activities within the Research domain. Each entity in the CERIF model is defined by attributes and by relationships with other entities. Whereas the CERIF attribute and entity names are fixed in the model, the CERIF relationships are reified binary relationship entities, and their explicit relationship names are defined within the Semantic Layer in a timely context. The modular structure of CERIF with maintaining relationships as entities allows for multiple dimensions or views. A physical CERIF relationship is always set up by connecting two CERIF entities via ID and by assigning time-stamped references to the Semantic Layer, where the context is semantically formalized. CERIF – as a middle layer – enables connections between multiple complementing information systems in the Research domain. A CERIF-based system (Current Research Information System or CRIS) allows for the management of research information; it maintains the essential attributes of Research entities and with the CERIF 2008 release a semantics has been introduced to formalize the essential relationships between Research entities in a publication repository context.

The repository world has to manage research output information. During the workshop we want to discuss how the granularity of relevant CERIF entities and their representation in a CRIS environment transfers to the requirements within and the coverage of a repository context. It would be interesting to get a 'repository' perspective towards the requirements and expectations of a CRIS; which entities, attributes or relationships are essential. That is

- ⌚ which entities define the range of the repository world (i.e. person, project, orgunit, publication, ...)
- ⌚ are additional CERIF entities required (i.e. teaching)
- ⌚ are additional CERIF attributes required
- ⌚ what are the essential relationships in the repository world

A CERIF publication entity is represented by the following attributes and by core and result relationships.

### Formal CERIF Publication Entity Attributes:

- ⌚ cfResPublTitle.cfTitle (Publication Title)
- ⌚ cfResPublSubtitle (Publication Subtitle)
- ⌚ cfResPublAbstr.cfAbstr (Publication Abstract)
- ⌚ cfResPublKeyw.cfKeyw (Publication Keywords)
- ⌚ cfResPublBiblNote.cfBiblNote (Bibliographic Note)
- ⌚ cfResPubl.cfResPublId (Publication ID)
- ⌚ cfResPubl.cfResPublDate (Publication Date)

- ⌚ cfResPubl.cfNum (Publication Number)
- ⌚ cfResPubl.cfVol (Publication Number)
- ⌚ cfResPubl.cfEdition (Publication Number)
- ⌚ cfResPubl.cfSeries (Publication Series)
- ⌚ cfResPubl.cfIssue (Publication Issue)
- ⌚ cfResPubl.cfStartPage (Publication Start Page)
- ⌚ cfResPubl.cfEndPage (Publication End Page)
- ⌚ cfResPubl.cfTotalPages (Publication Total Pages)
- ⌚ cfResPubl.cfISBN (Publication ISBN)
- ⌚ cfResPubl.cfISSN (Publication ISSN)
- ⌚ cfResPubl.cfURI (Publication URI)

### Formal CERIF Publication Entity Relationships:

- ⌚ cfResPubl\_Class [**Publication Types** = Book, Review, Book Chapter Abstract, Book Chapter Review, Inbook, Anthology, Monograph, Referencebook, Textbook, Encyclopedia, Manual, Otherbook, Journal, Journal Article, Journal Article Abstract, Journal Article Review, Conference Proceedings, Conference Proceedings Article, Letter, Letter to Editor, PhD Thesis, Doctoral Thesis, Report, Short Communication, Poster, Presentation, Newsclipping, Commentary, Annotation]
- ⌚ cfResPubl\_ResPubl [**Publication-Publication Roles** = part, derived from]
- ⌚ cfPers\_ResPubl [**Person-Publication Roles** = is author of, is author (numbered of), is author (percentage) of, is editor (numbered) of, is editor of, is subject of, is reviewer of, is translator of, is publisher of, has commissioned, group authors]
- ⌚ cfOrgUnit\_ResPubl [**OrgUnit-Publication Roles** = claims IPR of, is publisher of, is curator of, provides reviewer for, is author of, has commissioned, is funded by, is author institution of, is publishing institution of is external organisation of]
- ⌚ cfProj\_ResPubl [**Project-Publication Roles** = is originator of]
- ⌚ cfResPubl\_ResPat [**Publication-Patent Roles** = is description of, describes use of]
- ⌚ cfResPubl\_ResProd [**Publication-Product Roles** = is description of, describes use of]

**References:**

- Brigitte Jörg, Keith Jeffery, Geert van Grootel, Anne Asserson. CERIF2008 - 1.1 Full Data Model (FDM) - Model Introduction and Specification. euroCRIS, March 2010.
- Brigitte Jörg, Keith Jeffery, Anne Asserson, Geert van Grootel, Henrik Rasmussen, Adrian Price, Thomas Vestam, Mikael Karstensen Elbæk, Nikos Houssos, Rita Voigt, E.J. Simons, Jan Dvorak. CERIF2008 -1.1 Semantics. euroCRIS, March 2010.