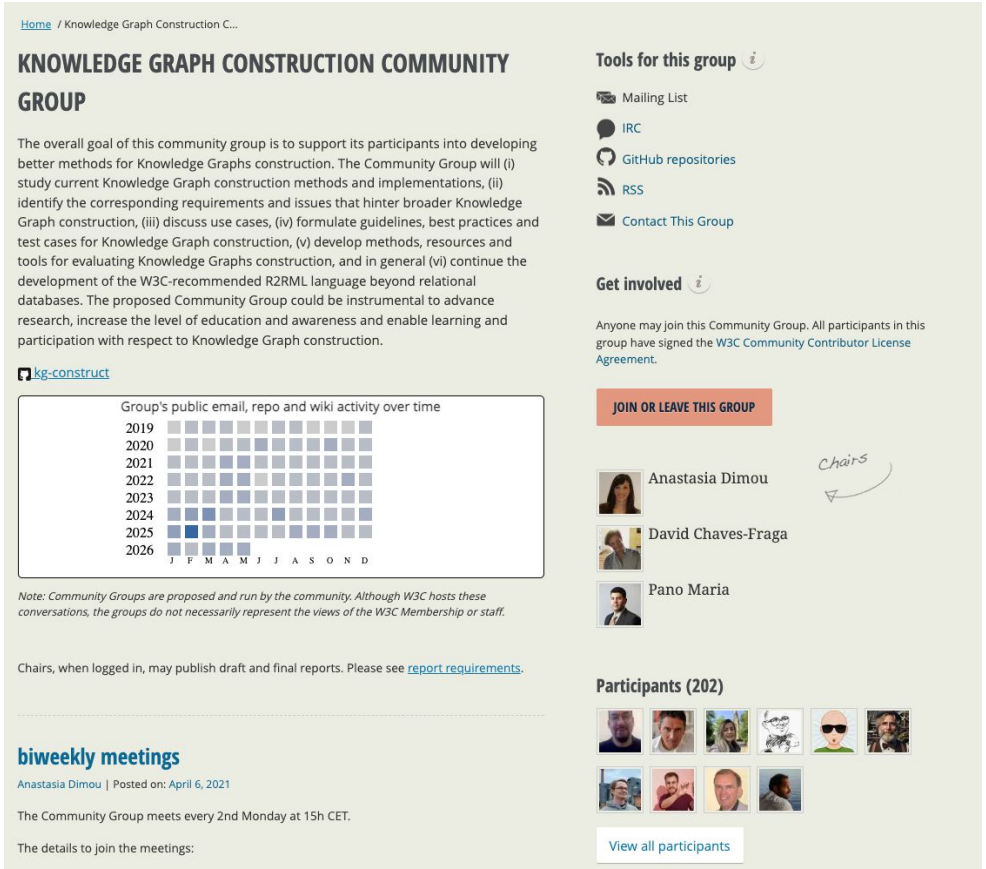
W3C Community Group Knowledge Graph Construction

Christophe Debruyne

http://w3id.org/kg-construct

(**slides are available in the website of the workshop**)

W3C Community Group - Knowledge Graph Construction



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KNOWLEDGE GRAPH CONSTRUCTION COMMUNITY GROUP

The overall goal of this community group is to support its participants into developing better methods for Knowledge Graphs construction. The Community Group will (i) study current Knowledge Graph construction methods and implementations, (ii) identify the corresponding requirements and issues that hinter broader Knowledge Graph construction, (iii) discuss use cases, (iv) formulate guidelines, best practices and test cases for Knowledge Graph construction, (v) develop methods, resources and tools for evaluating Knowledge Graphs construction, and in general (vi) continue the development of the W3C-recommended R2RML language beyond relational databases. The proposed Community Group could be instrumental to advance research, increase the level of education and awareness and enable learning and participation with respect to Knowledge Graph construction.

kg-construct

Group's public email, repo and wiki activity over time

2019
2020
2021
2022
2023
2024
2025
2026
J F M A M J J A S O N D

Note: Community Groups are proposed and run by the community. Although W3C hosts these conversations, the groups do not necessarily represent the views of the W3C Membership or staff.

Chairs, when logged in, may publish draft and final reports. Please see report requirements.

biweekly meetings

Anastasia Dimou | Posted on: April 6, 2021

The Community Group meets every 2nd Monday at 15h CET.

The details to join the meetings:

Tools for this group

Mailing List
IRC
GitHub repositories
RSS
Contact This Group

Get involved

Anyone may join this Community Group. All participants in this group have signed the W3C Community Contributor License Agreement.

JOIN OR LEAVE THIS GROUP

Chairs

Anastasia Dimou
David Chaves-Fraga
Pano Maria

Participants (202)

View all participants

202 participants (~25-30 active)

Pano Maria, new co-chair

In contact with W3C for WG

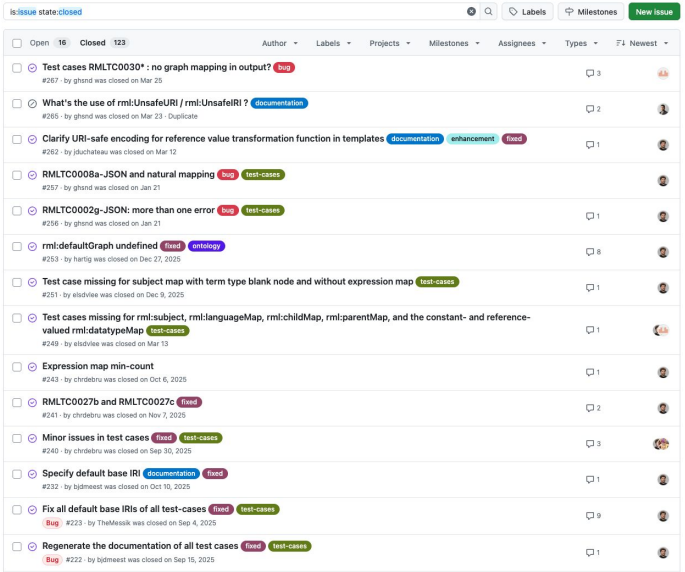
http://w3id.org/kg-construct

http://github.com/kg-construct

Towards the RML standardization

- **Six** specs:
  - RML-Core: Schema transformations
  - RML-IO: Source and target
  - RML-CC: Collection and containers
  - RML-FNML: Data transformation functions
  - RML-star: RDF-star
  - RML-views: Complex data pipelines
- Modular approach
- Unification of prefixes → w3id.org/rml/
- The RML portal → https://w3id.org/rml/portal

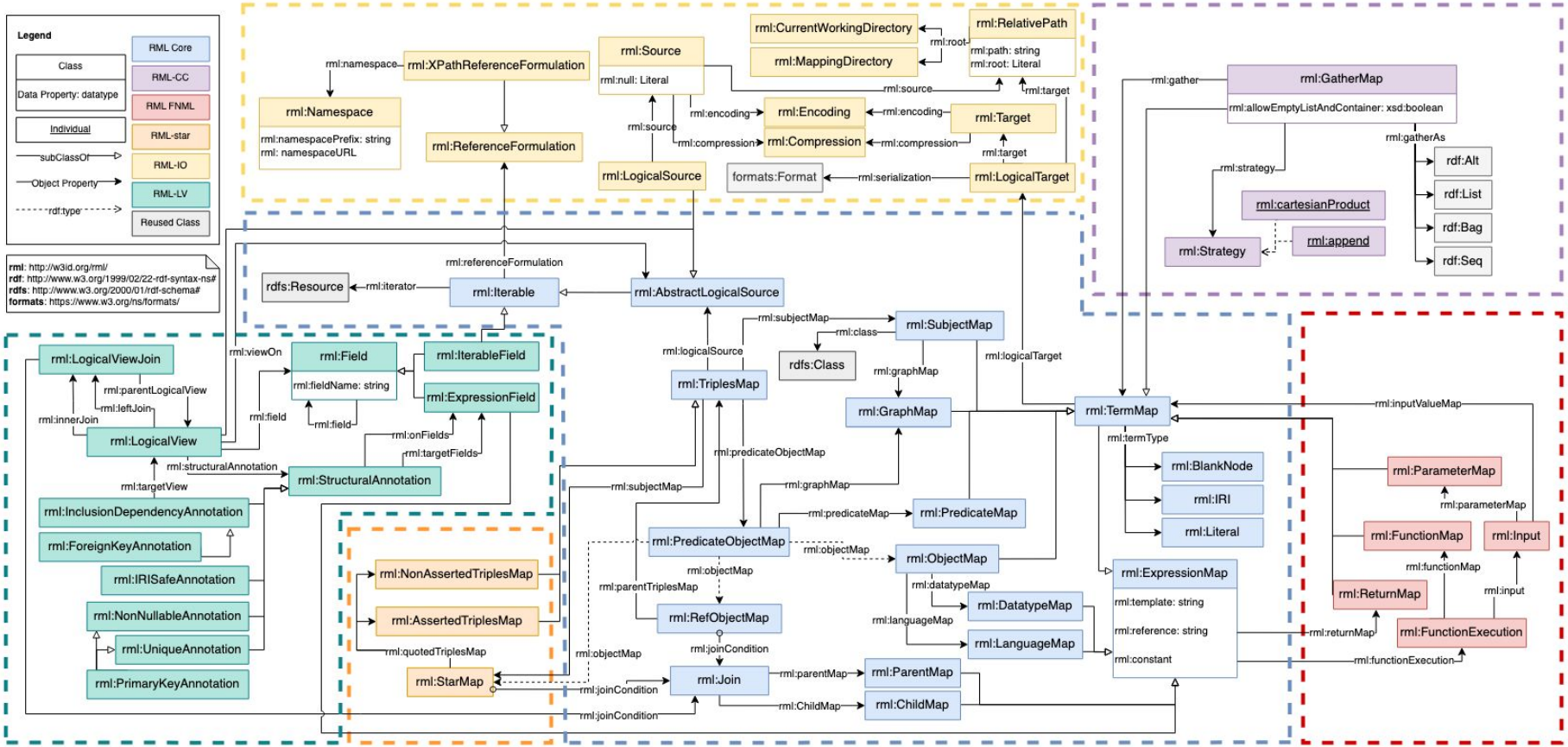
The most relevant open issues from RML-core have been solved during the last months



RML overview (2020-2026)

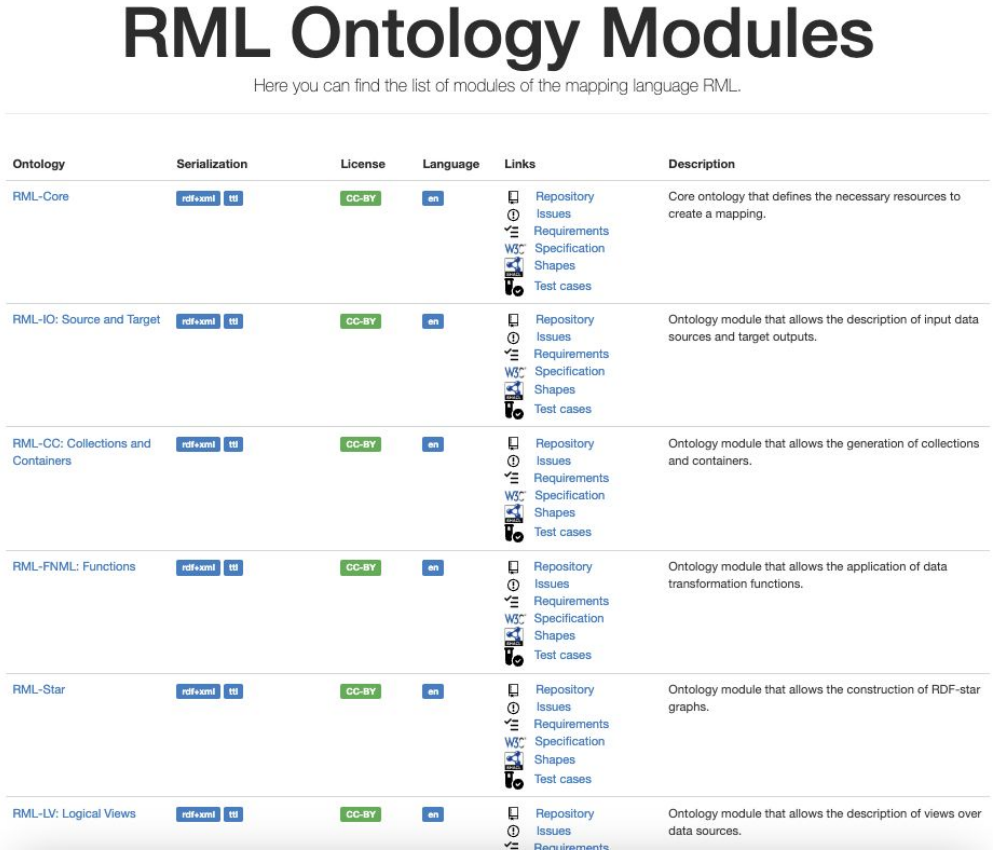
http://w3id.org/rml/portal

http://github.com/kg-construct



Complete set of resources per module

- Specifications
- OWL ontologies
- SHACL shapes for mapping validation
- Test cases
- Backwards compatibility



RML Ontology Modules

Here you can find the list of modules of the mapping language RML.

Ontology	Serialization	License	Language	Links	Description
RML-Core	rdf+xml ttl	CC-BY	en	Repository Issues Requirements Specification Shapes Test cases	Core ontology that defines the necessary resources to create a mapping.
RML-IO: Source and Target	rdf+xml ttl	CC-BY	en	Repository Issues Requirements Specification Shapes Test cases	Ontology module that allows the description of input data sources and target outputs.
RML-CC: Collections and Containers	rdf+xml ttl	CC-BY	en	Repository Issues Requirements Specification Shapes Test cases	Ontology module that allows the generation of collections and containers.
RML-FNML: Functions	rdf+xml ttl	CC-BY	en	Repository Issues Requirements Specification Shapes Test cases	Ontology module that allows the application of data transformation functions.
RML-Star	rdf+xml ttl	CC-BY	en	Repository Issues Requirements Specification Shapes Test cases	Ontology module that allows the construction of RDF-star graphs.
RML-LV: Logical Views	rdf+xml ttl	CC-BY	en	Repository Issues Requirements	Ontology module that allows the description of views over data sources.

http://w3id.org/rml/portal

(new) RML Implementation Report

RML Implementation Report

Unofficial Draft 21 April 2026

▼ **More details about this document**

Latest published version:
none

Latest editor's draft:
https://kg-construct.github.io/implementation-report/

History:
Commit history

Editor:
David Chaves-Fraga (CiTIUS – University of Santiago de Compostela)

Feedback:
GitHub kg-construct/implementation-report (pull requests, new issue, open issues)

Abstract

This document reports implementation results for the RML specification family across six modules: RML-Core, RML-IO, RML-FNML, RML-CC, RML-LV, and RML-star. Engine metadata is loaded from this repository, while test-case metadata is pulled from the module repositories and engine results are loaded from one CSV file per engine.

Status of This Document

This document is a draft of a potential specification. It has no official standing of any kind and does not represent the support or consensus of any standards organization.

This is a living implementation report intended to be regenerated automatically from module test-case inventories and per-engine result CSV files, without requiring any server-side component.

To integrate the 2026 challenge results

Available at:
https://kg-construct.github.io/implementation-report/

(new) RML Working Group Charter

PROPOSED RML Working Group Charter

The **mission** of the RML Working Group is to define an extension of the R2RML language to allow generation of RDF from other data formats beyond relational databases.

Join the RML Working Group.

This proposed charter is available on *GitHub*. *Feel free to raise issues*.

Start date	*[dd monthname yyyy] (date of the "Call for Participation", when the charter is approved)*
End date	*[dd monthname yyyy]* (Start date + 2 years)
Chairs	*[chair name] (affiliation)*
Team Contacts	Pierre-Antoine Champin *(0.1 FTE) - TBC*
Meeting Schedule	**Teleconferences:** 1 hour calls to be held weekly; extra topic-specific calls may also be held **Face-to-face:** face-to-face meetings may be scheduled by consent of the participants, usually no more than 2 per year.

1. Motivation and Background

RML (RDF Mapping Language) is an extension of R2RML that was intially proposed in 2014 by Anastasia Dimou et al., proving a way to generate RDF graphs from data formats beyond RDB. Other extension were also proposed to declare transformation functions within the mappings (R2RML-F proposed by Christophe Debruyne and Declan O'Sullivan), or to generate RDF graphs from non-relational databases (xR2RML by Franck Michel et al.). Among all these extensions, RML has become quite popular, with currently more than 8 implementations widely used in industry and academic projects. The Knowledge Graph Construction W3C Community Group was formed in 2019 to gather feedback, use-cases, and explore how to merge all extension in one integrated specification maintaining backwards compatilibity with R2RML.

2. RML-Core: RDF Mapping Language - Core

This specification defines the principal characteristics of the language, generalizing and refining R2RML; the rest of specifications build on top of it. RML-Core consists of almost the same concepts as the R2RML, but redefines them to distinguish them from the R2RML counterparts. It also incoporates new features missing in R2RML such the dynamic generation of language tags or datatypes. In case RDF 1.2 becomes a W3C Recommendation and standardize the use of triple terms (i.e., RDF triples used as objects in other triples), RML-Core will ensure full compliance with RDF 1.2.

the R2RML feature set can be translated back into a valid R2RML mapping.

Available at:
https://w3id.org/kg-construct/rml-wg-charter/

Github for issues/comments:
https://github.com/kg-construct/rml-wg-charter

Presentation at the Advisory Committee W3C Meeting

Knowledge Graph Construction

W3C - Community Group

David Chaves-Fraga

Senior Researcher at CiTIUS@USC
Assistant Prof. at University of Santiago de Compostela (USC-Spain)

W3C AC meeting 2026
Hangzhou, China
20-22 April 2026

Call for Action! (it's important)

We need to demonstrate the non-academic need for RML:

- Spread the word among your industry partners
- Join the CG: W3C Knowledge Graph Construction Community Group
- Let us know about any project (academic or non-academic) that is using RML
- If your organization is not currently a W3C member but would become one if the WG is created, please let us know
- Fill out this form: RML Standardization Support Form

So far, 38 organizations have confirmed the need for RML to be standardized through W3C.

W3C Community Group Knowledge Graph Construction

http://w3id.org/kg-construct