

# Linked Data-driven Web Components

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## ABSTRACT

This paper provides a ...

## 1. INTRODUCTION

The

The remainder of this article...

## 2. RELATED WORK

Web Components and the Semantic Web [1]

## 3. WEB COMPONENTS

*Web Components* are a set of W3C standards that enable the creation of reusable widgets or components in Web documents and Web applications. Web components aim to bring *Component-Based Software Development* (CBSD) to the World Wide Web. Some advantages of CBSD approach are reusability, replacability, extensibility, encapsulation and independence.

## 4. LINKED DATA-DRIVEN WEB COMPONENTS

Definition

We define a *Linked Data-driven* (LD-R) Web Component as a Web component which employs RDF data model for representing its content and specification (i.e. metadata about the component).

### 4.1 Features

Linked Data-driven Web components provide the following features:

- *Fine-grained Web applications.* Resource Description Framework (RDF) provides a common data model that

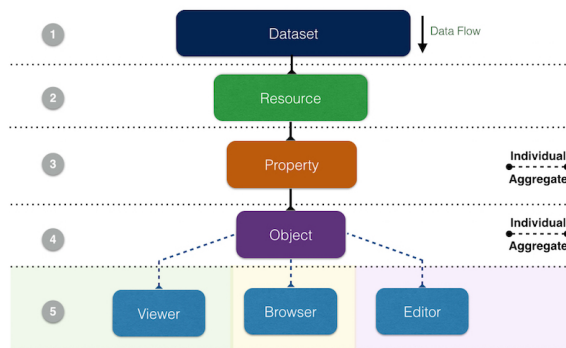


Figure 1: Architecture of LD-R Applications.

allows data-driven components to be shared and integrated in a structured way across different applications. Figure 1 depicts different component levels in a Linked Data-driven Web application. The dataflow in the application starts from the *Dataset* component which handles all the events related to a set of resources embedded in a named graph. The next level is the *Resource* component which is identified by a URI and indicates what we are describing in the application. A resource is specified by a set of properties which are handled by the *Property* component. Properties can be either individual or aggregate when combining multiple features of a resource. Each property is instantiated by a value (or multiple values in case of an aggregate object). The values of properties are controlled by the *Object* component which invokes different components to view, edit and browse the property values. *Viewer*, *Editor* and *Browser* components are terminals in the LD-R single directional data flow where customized user-generated components can be plugged into the system.

- component architecture
- access control

Customization and Personalization

- scopes

Better content visibility reusability

- RDFa, Microdata

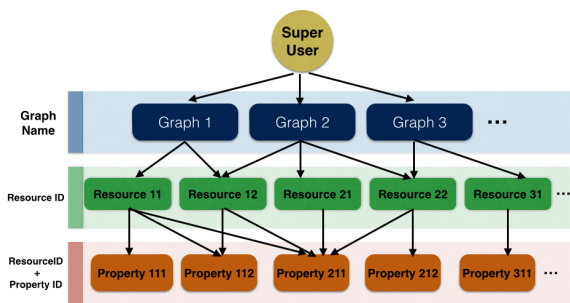


Figure 2: User Access Levels

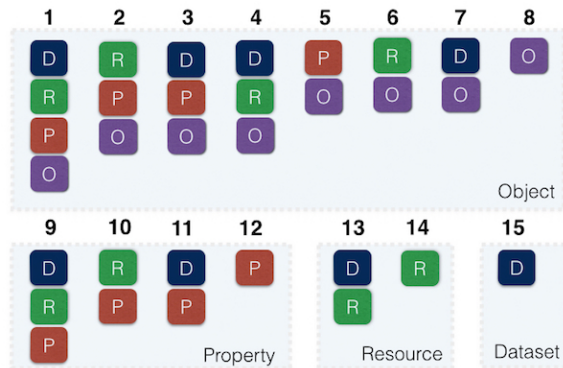


Figure 3: Scopes

Better component visibility, reusability and assembly

## 4.2 Life Cycle

## 5. IMPLEMENTATION

<http://ld-r.org>

## 6. EVALUATION

RISIS

OpenPhacts

## 7. CONCLUSION AND FUTURE WORK

## 8. ACKNOWLEDGEMENT

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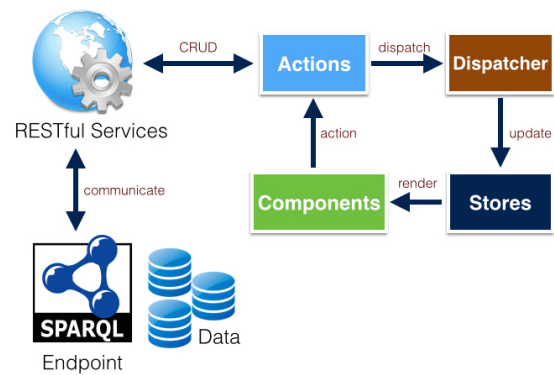


Figure 5: Data Flow

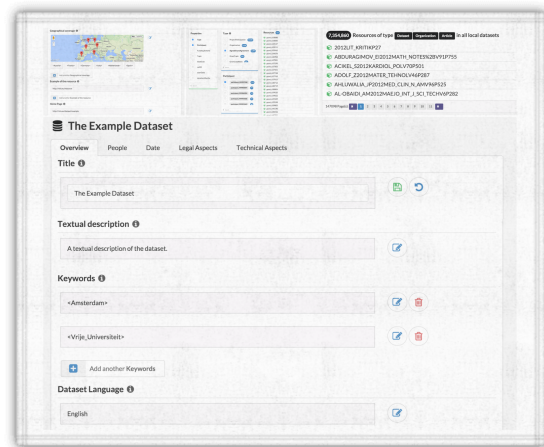


Figure 6: Screenshot

ropean Union's 7th Framework Programme provided for the project RISIS (GA no. 313082).

## 9. REFERENCES

- [1] M. Casey and C. Pahl. Web components and the semantic web. *Electr. Notes Theor. Comput. Sci.*, 82(5):156–163, 2003.

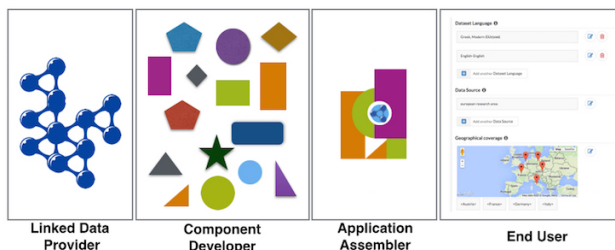


Figure 4: Life-cycle