

Federating advertisement targeting with Linked Data

Sven Lieber, Ben De Meester, Ruben Verborgh and Anastasia Dimou

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Federating advertisement targeting with Linked Data

en De Meester, Ruben Verborgh and Anastasia Dimou

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1&1

An online advertising example

Federated querying with EcoDaLo

Comparison of different approaches

Privacy and ethics considerations

Although still relying on
an **identification mechanism**,
we improve advertising targeting
with **decentralized knowledge graphs**
by **reusing existing infrastructure**
which **avoids data sharing**.

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Comparison of different approaches

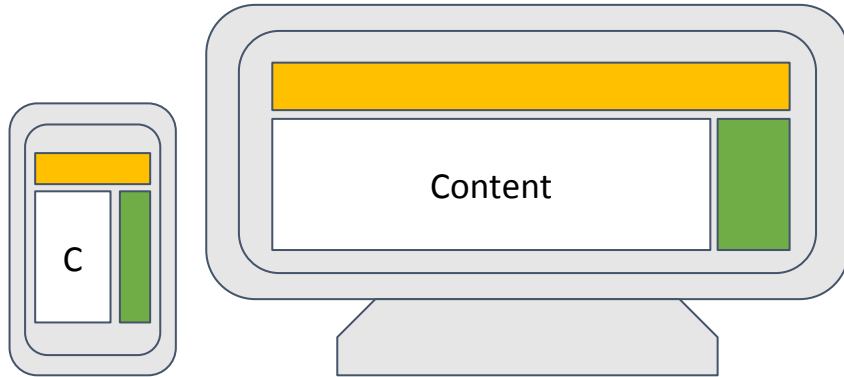
Privacy and ethics considerations

How does online advertising work?

what: promote SEMANTICS conference

target: SemWeb researchers between 18 and 60

format: mobile leaderboard



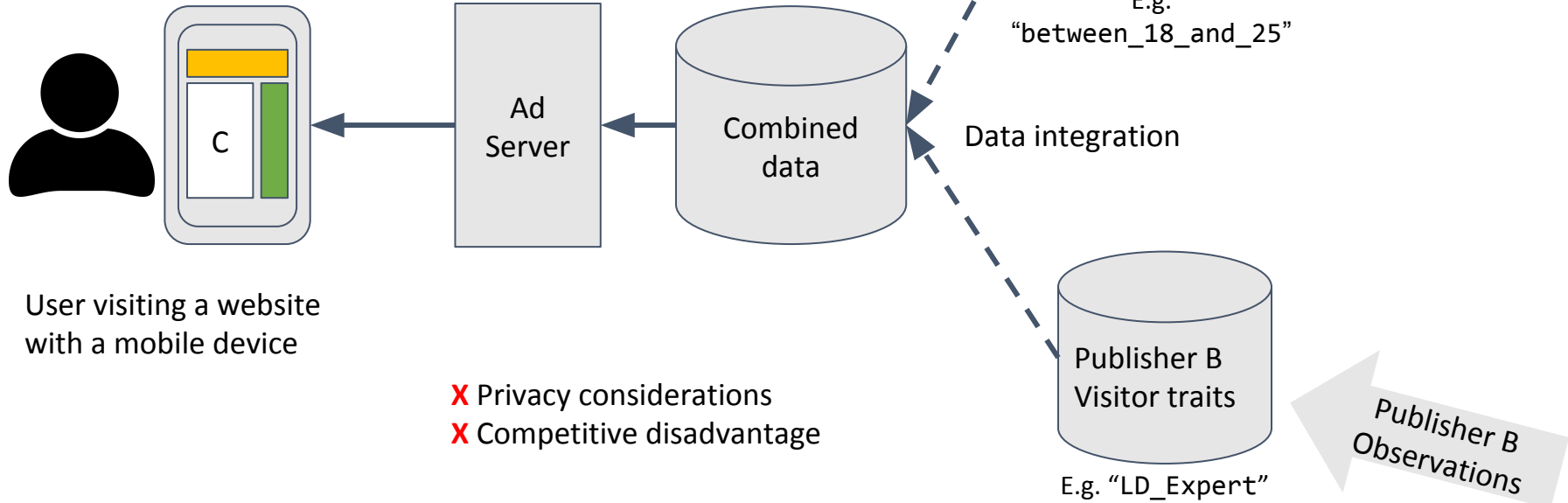
Campaign
setup

Ad
serving

**Online
Behavioral
Advertising
(OBA)**

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EcoDaLo facts

Research in Flanders, Belgium

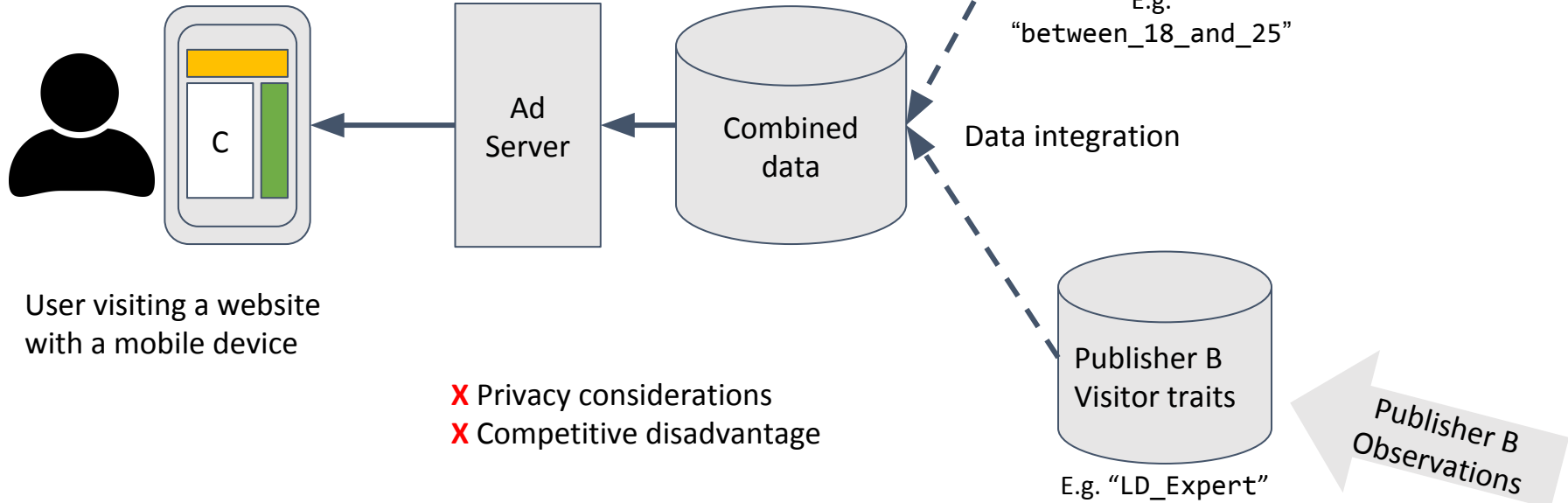
Three complementary funding consortium partners:
AdLogix, **Pebble Media** and **Roularta Media Group**

Partners explaining our solution

<https://sven-lieber.org/ecodalo-video>

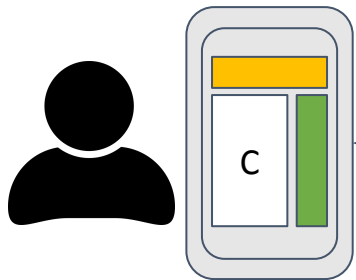
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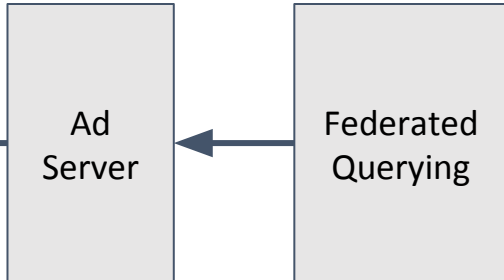


Our approach avoids combination of data

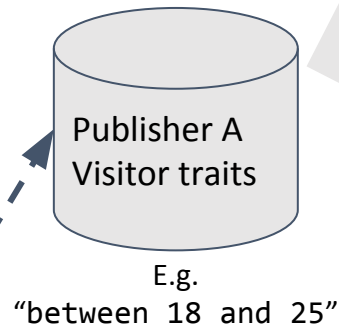
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User visiting a website with a mobile device



- ✓ Only aggregate traits
- ✓ No data is shared
- ✓ Exclusivity of traits (and how observed)

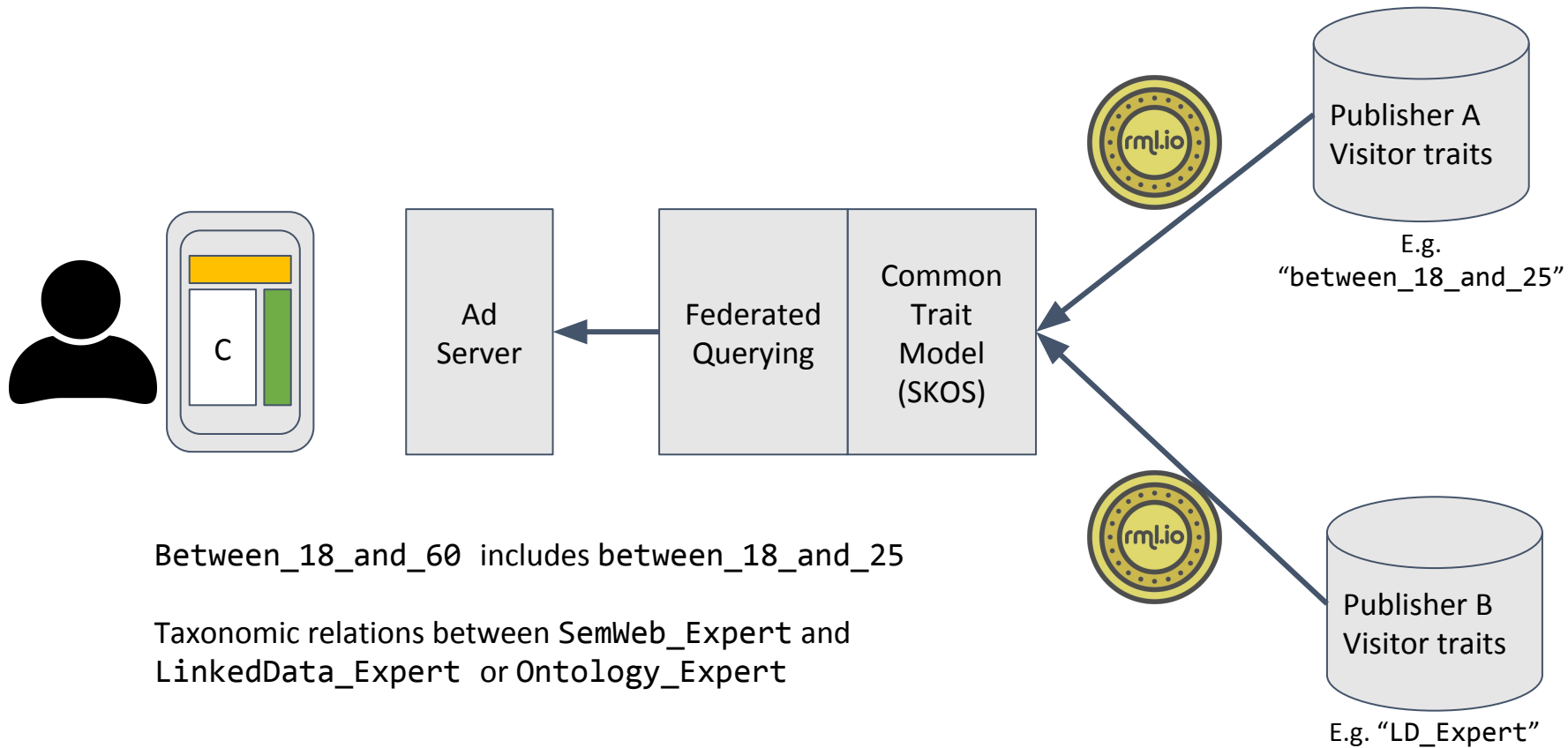


Publisher A Observations



Publisher B Observations

Our solution is based on declarative semantic mappings



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Our solution compared to other approaches

	Local publisher	Global publisher	(Data) integration	(Trait) federation
Trait quality	✓✓	X	✓✓	✓✓
Scale	X	✓✓	✓	✓
Exclusive(privacy)	✓✓	X	X	✓
Ease of setup	✓✓	✓✓	X	✓
Interoperability	XX	XX	X	✓✓
Maintainability	X	X	X	✓

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GDPR-compliant consent needed

Which personal data is used for **which** purpose; **third parties**; explicit **opt-in**

Ethical considerations beyond our technical solution

EcoDaLo assumes **good faith** of publishers, **ethical guidelines** exist which need to be considered

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More research on **describing** and using **constraints** for querying of **decentralized knowledge graphs**



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