



RDF Stream Processing Workshop

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Why Streams?



Internet of Things
Sensor Networks
Mobile Networks
Smart Devices
Participatory Sensing
Transportation

Financial Data
Social Media
Urban Planning
Health Monitoring
Marketing



“It’s a
streaming
world!”^[1]

Why Streams?

RDF

Go Web

- Web standards
- Data discovery
- Data sharing
- Web queries

Processing

- Query languages
- Query answering
- Efficient processing
- Query Federation

Integration

- Semantics
- Vocabularies
- Data Harvesting
- Data linking
- Matching

Reasoning

- Ontologies
- Expressivity
- Inference
- Rule processing
- Knowledge bases

The RSP Community

Many topics

RDF Streams
Stream Reasoning
Complex Event Processing
Stream Query Processing
Stream Compression
Semantic Sensor Web

Tons of work

Research work
Many Papers
PhD Thesis
Datasets
Prototypes
Benchmarks

W3C RSP Community Group

<http://www.w3.org/community/rsp>

Effort to **discuss**
standardize
combine
formalize
evangelize our work on RDF stream processing

The RSP Community



Some of the Work done...

The screenshot displays the W3C RSP-QL community page. At the top, it says 'streamreasoning / RSP-QL' with an 'Unwatch' button and a count of '10'. Below this is the text 'An home of RSP-QL syntax and semantics discussion — Edit'. The left sidebar contains a 'W3C' logo, a 'Home' link, and a list of links including 'RDF', 'The mi', 'comm', 'This in', 'well as', 'static F', 'langua', 'this Co', 'graphs', 'time.', 'Note: C', 'Merge pull requ', 'jpcik author', 'srbench', 'DEBS Chal', 'Example_of', 'LICENSE', 'README.n', 'RSP-QL Sa', 'Semantics.', 'What links here', 'Related changes', 'Special pages', 'Printable version', 'Permanent link', 'Page information', and 'RSP'. The main content area has tabs for 'Page', 'Discussion', 'Read', 'View source', and 'View history'. It features a 'Main Page' section with a 'Contents [hide]' box listing '1 RSP Community Group Wiki', '1.1 Organization', '1.2 Work in Progress', and '1.3 Background'. Below this is the 'RSP Community Group Wiki' section, followed by 'Organization', 'Call Schedule' (listing meetings on May 8 and May 22, 15.00 CET), 'Meeting Minutes', and 'Work in Progress' (listing 'Use cases', 'Concepts and Definitions', 'Open Questions', and 'RSP Query Semantics').

- Use cases / requirements
- Existing approaches
- RSP Data model
- RSP query language
- RSP Serialization
- System Implementations

RSP Workshop: Contributions

- P3: [From Semantic Complex Event Processing to Ubiquitous Pragmatic Web 4.0.](#)

A. Paschke and K. Teymourian

- P4: [CoDeR Model for Continuous Reasoning over OWL 2 RL Ontologies.](#)

D. Monks

- P5: [On the Road to the Evaluation of RDF Stream Compression Techniques.](#)

J. Arias, O. Corcho, J. Fernández, N. Fernández, A. Llaves and L. Sánchez

- P6: [Semantics and Complexity of RDF Stream Processing & Reasoning: Expression of Interest.](#)

H. Beck, M. Dao-Tran and T. Eiter

- P7: [Scalability in RDF Stream Processing Systems.](#)

A. Llaves and O. Corcho

- P8: [On the need for adaptivity in RDF Stream Processing.](#)

Z. Shamszaman, M. Intizar Ali and A. Mileo

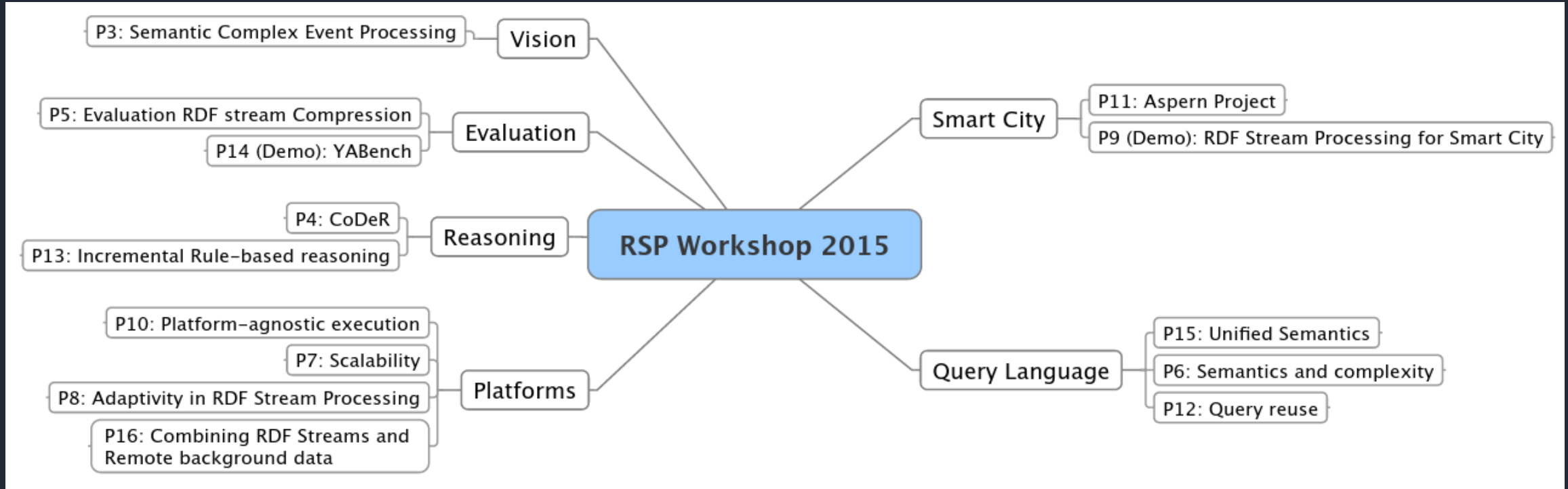
- P10: [Platform-Agnostic Execution Framework Towards RDF Stream Processing.](#)

D. Le Phuoc, M. Dao-Tran, C. Le Van, LT Anh, MN Duc, T. Tran Nhat and M. Hauswirth

RSP Workshop: Contributions

- P11: [The Aspern Smart City Project.](#)
J. Xavier Parreira
- P12: [Sharing and Reusing Continuous Queries – Expression of Interest.](#)
R. Keskisärkkä and E. Blomqvist
- P13: [Incremental Rule-based Reasoning over RDF Streams: An Expression of Interest.](#)
R. Albeladi, K. Martinez and N. Gibbins
- P15: [Towards Unified Semantics for RDF Stream Query Processing.](#)
D. Dell’Aglio, JP Calbimonte, E. Della Valle and O. Corcho
- P16: [On Combining RDF Streams and Remotely Stored Background Data.](#)
S. Dehghanzadeh, D. Dell’Aglio, S. Gao, E. Della Valle, A. Mileo and A. Bernstein
- P14: [Demo: YABench – Yet Another RDF Stream Processing Benchmark.](#)
M. Kolchin and P. Wetz
- P9: [RDF Stream Processing for Smart City Applications.](#)
F. Gao, M. Ali and A. Mileo

RSP Workshop: Contributions



RSP Workshop

- 9:00–9:15 Opening
- 9:15–10:30 Eol: 8+2 min presentations
 - Query Language: P6, P12, P15
 - Reasoning: P4, P13
 - Smart Cities: P11
- 10:30–11:00 Coffee
- 11:00–12:00 Eol: 8+2 min presentations
 - Platforms: P10, P7, P8, P16
 - Evaluation: P5
- 12:00–12:30 Demo Session
 - P9: RDF Stream Processing for Smart City
 - P14: YABench
- 12:30–14:00 Lunch

RSP Workshop

- 14:00–14:30 Keynote by **Adrian Paschke**
- 14:30–15:30 Breakout groups, potential topics:
 - Query language and semantics
 - Serialisation/On the wire protocol
 - CEP layer on top of query language
 - Benchmarking/evaluation
- 15:30–15:45 Coffee
- 15:45–16:45 Break out groups continue
- 16:45–17:30 Report back

- Social meal in the evening