The Use of Open-Multinet Ontology for Experiment Monitoring – Demo

Yahya Al-Hazmi, Alexander Willner

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Technische Universität Berlin

Fraunhofer FOKUS

OPENMULTINET

FED4FIRE

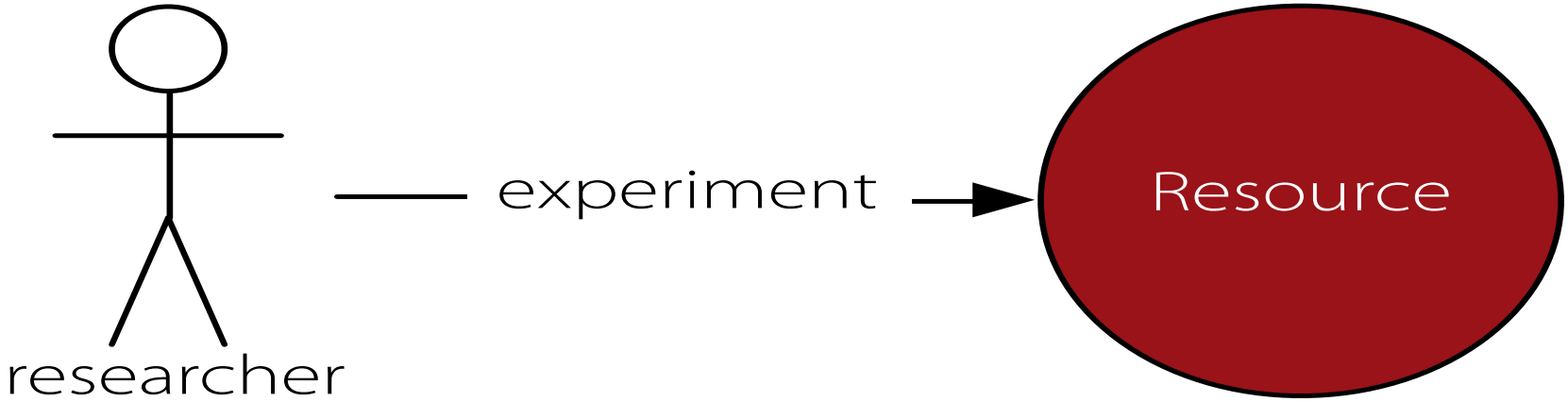
Demo Goal

Demonstrate semantic experiment life cycle including resource provisioning (Slice Federation Architecture) and monitoring (OML Measurement Stream Protocol)

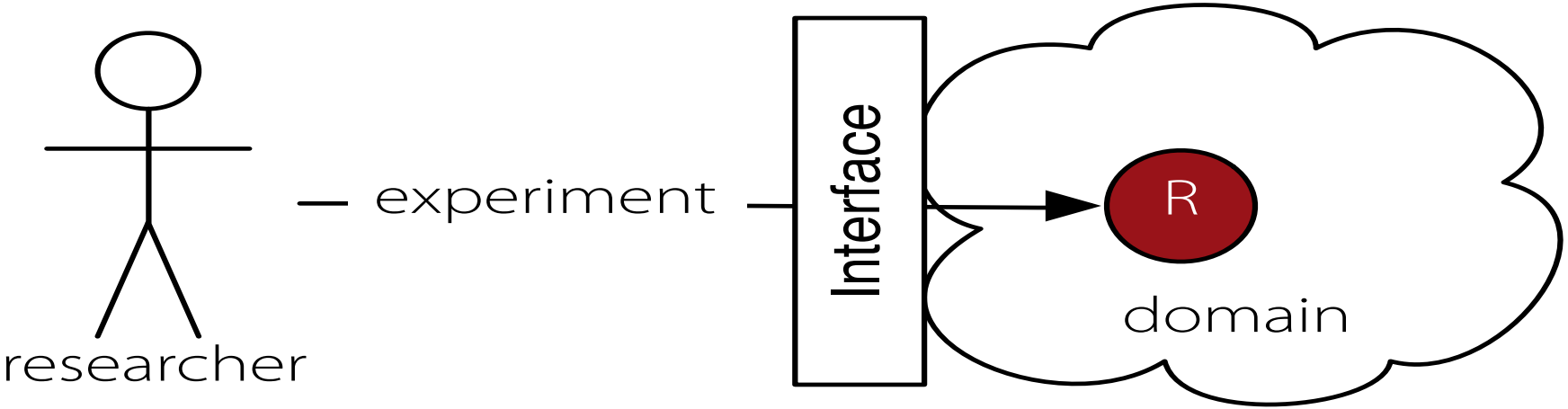
Line of Thought

RESOURCE CENTRIC APPROACH

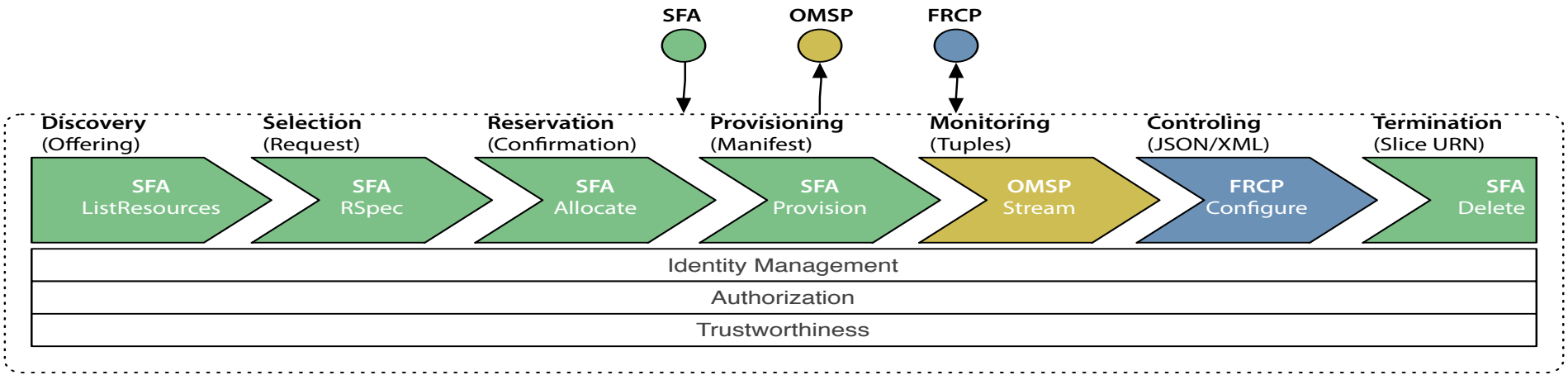
USE CASE



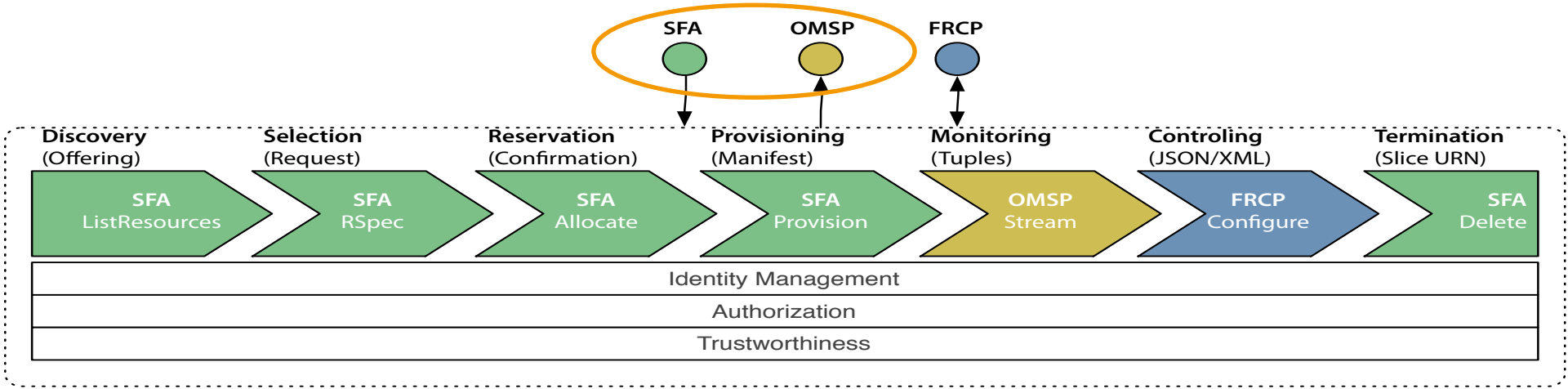
FIRE APIS AND DATA MODELS



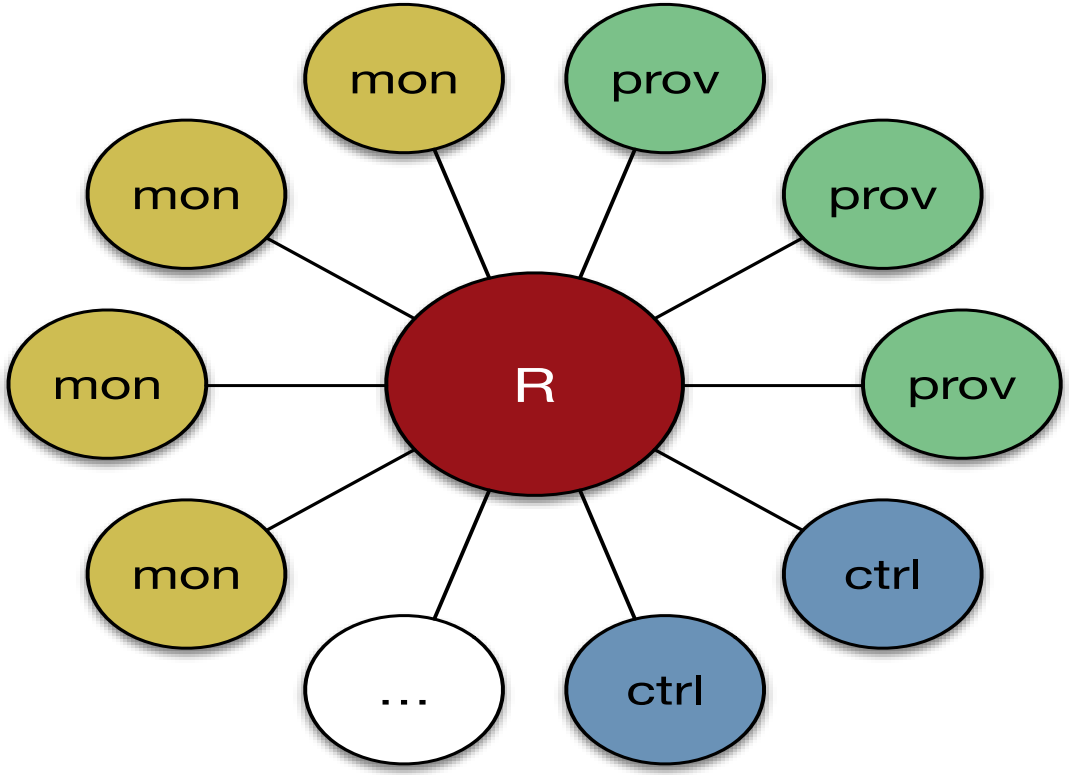
FUNCTIONALITIES (API)



DEMO FOCUS


SFA
OMSP
FRCP
Discovery
(Offering)
Selection
(Request)
Reservation
(Confirmation)
Provisioning
(Manifest)
Monitoring
(Tuples)
Controling
(JSON/XML)
Termination
(Slice URN)
SFA
ListResources
SFA
RSpec
SFA
Allocate
SFA
Provision
OMSP
Stream
FRCP
Configure
SFA
Delete
Identity Management
Authorization
Trustworthiness

FUNCTIONALITIES (RESOURCE)

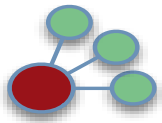


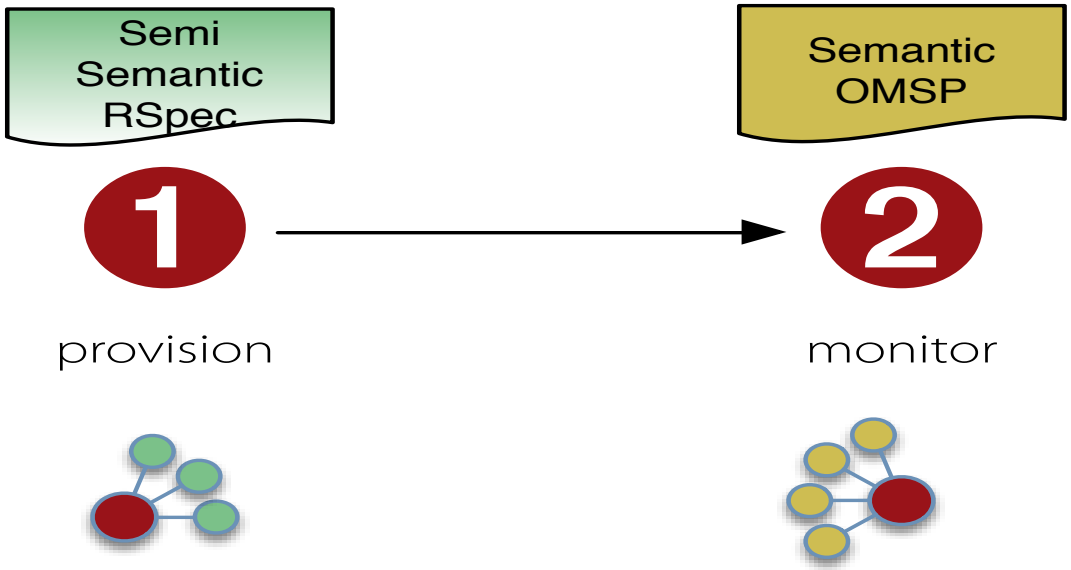
Demo Setup & Workflow

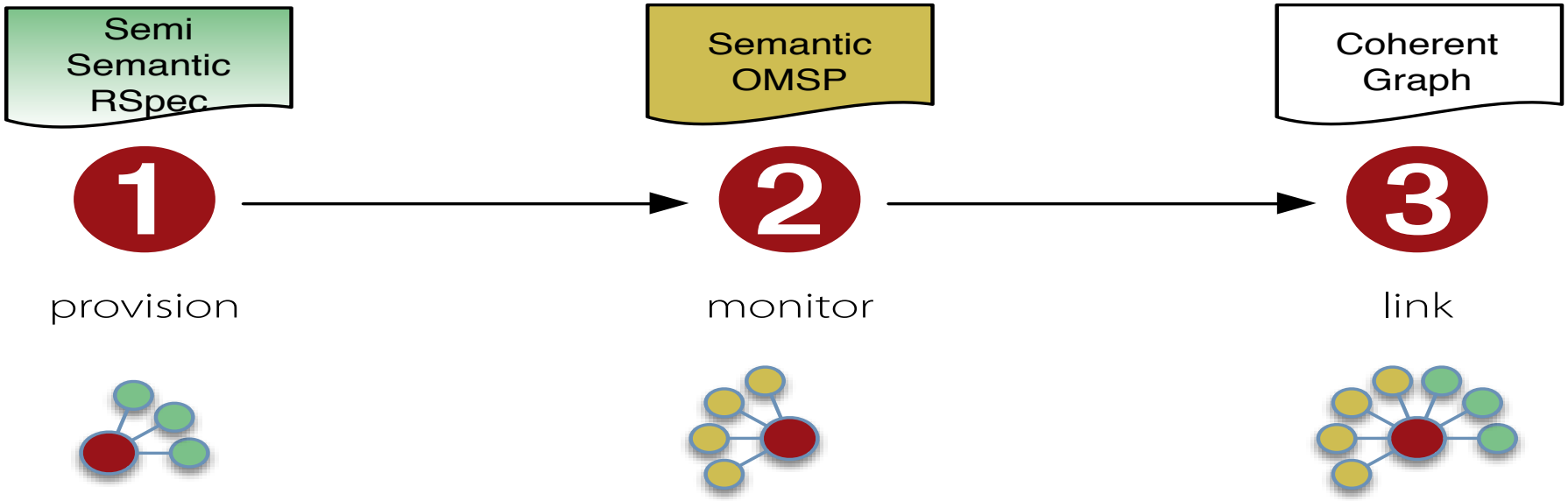
Semi
Semantic
RSpec

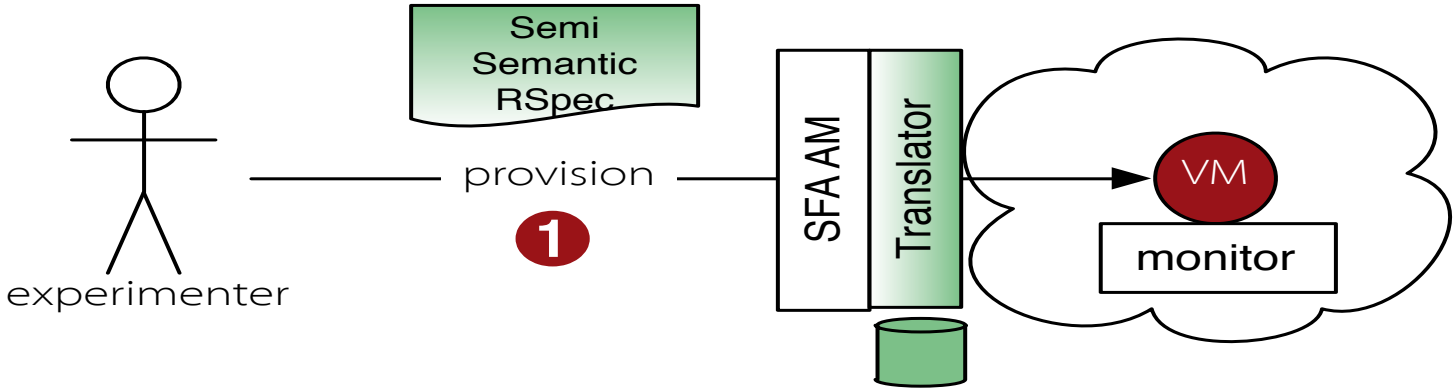
1

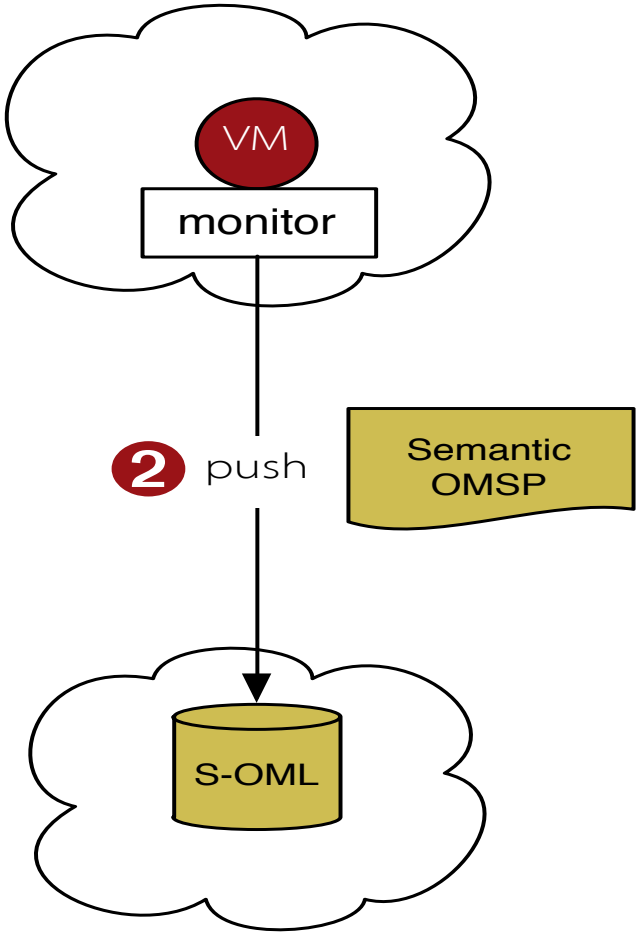
provision

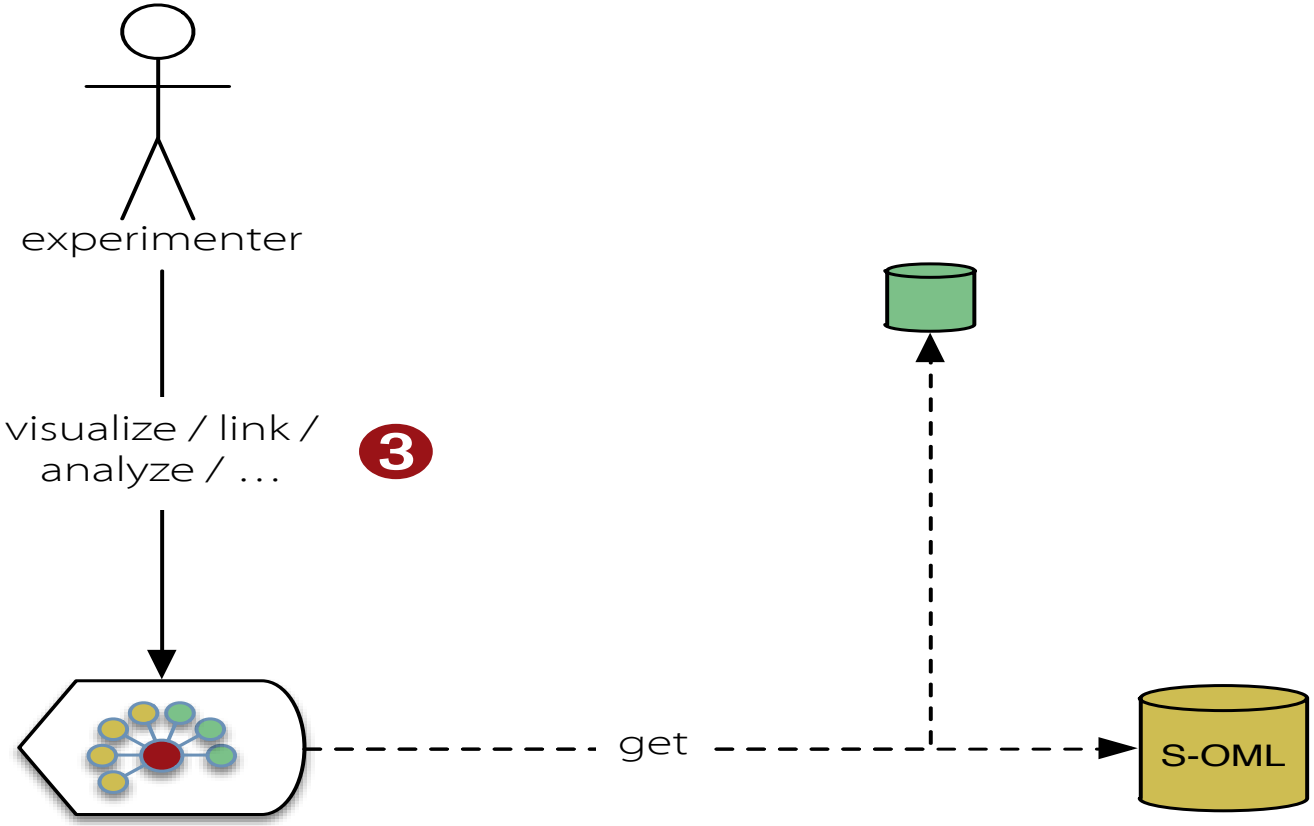


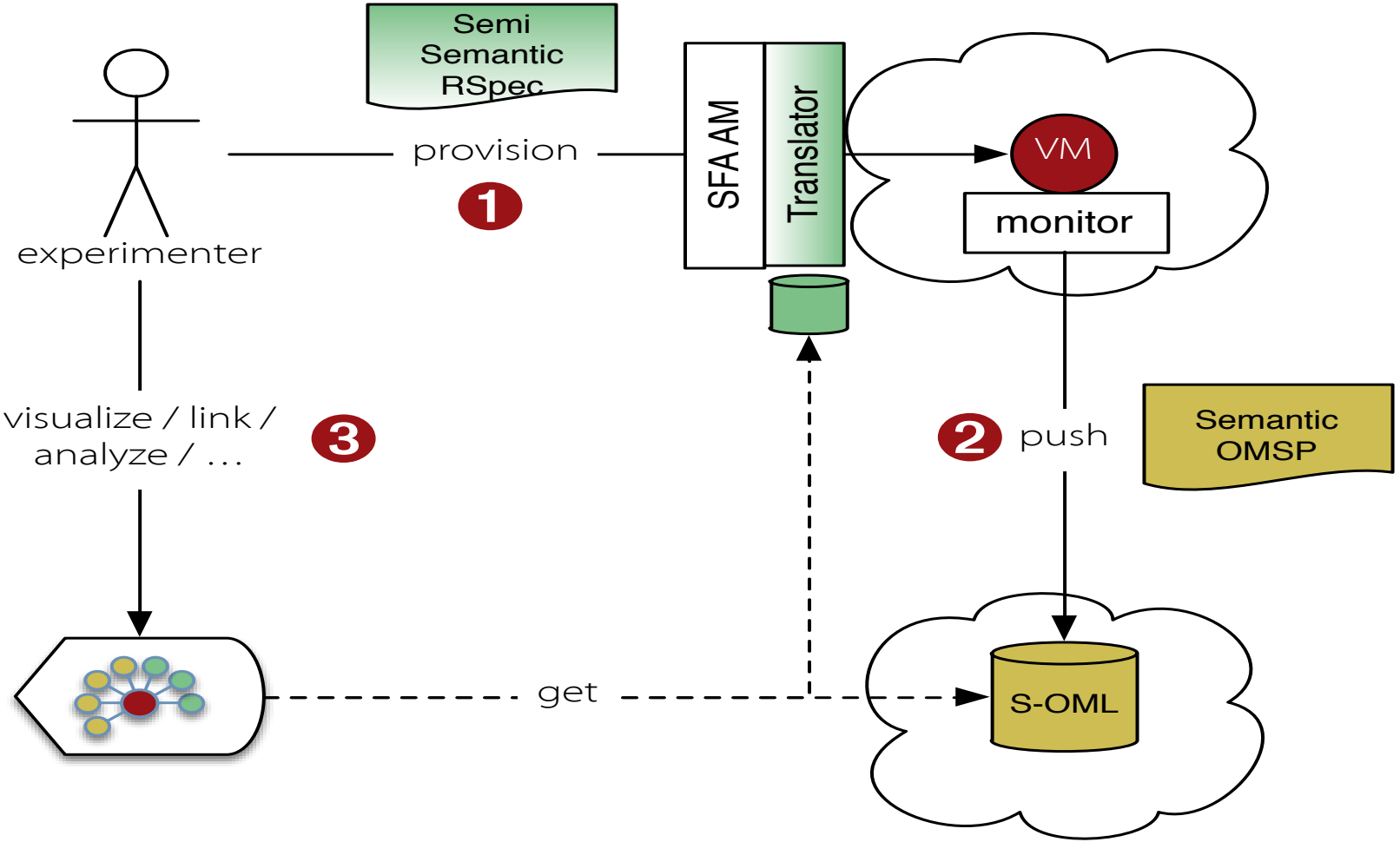

Semi
Semantic
RSpec
Semantic
OMSP
1
2
provision
monitor


Semi
Semantic
RSpec
Semantic
OMSP
Coherent
Graph
1
2
3
provision
monitor
link


Semi
Semantic
RSpec
provision
1
experimenter
SFA AM
Translator
VM
monitor


VM
monitor
2
push
Semantic
OMSP
S-OML


experimenter
visualize / link /
analyze / ...
3
get
S-OML


Semi
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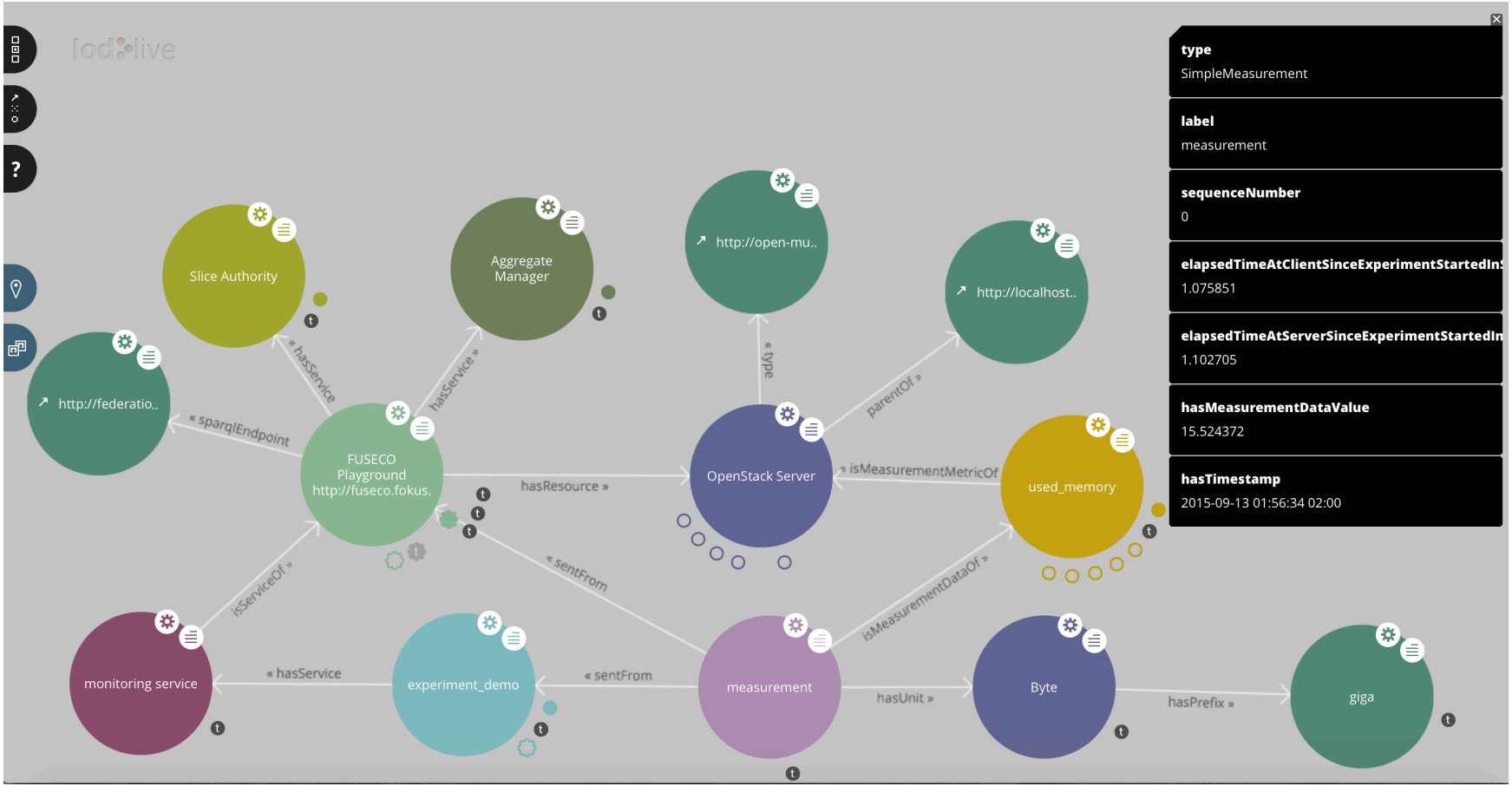
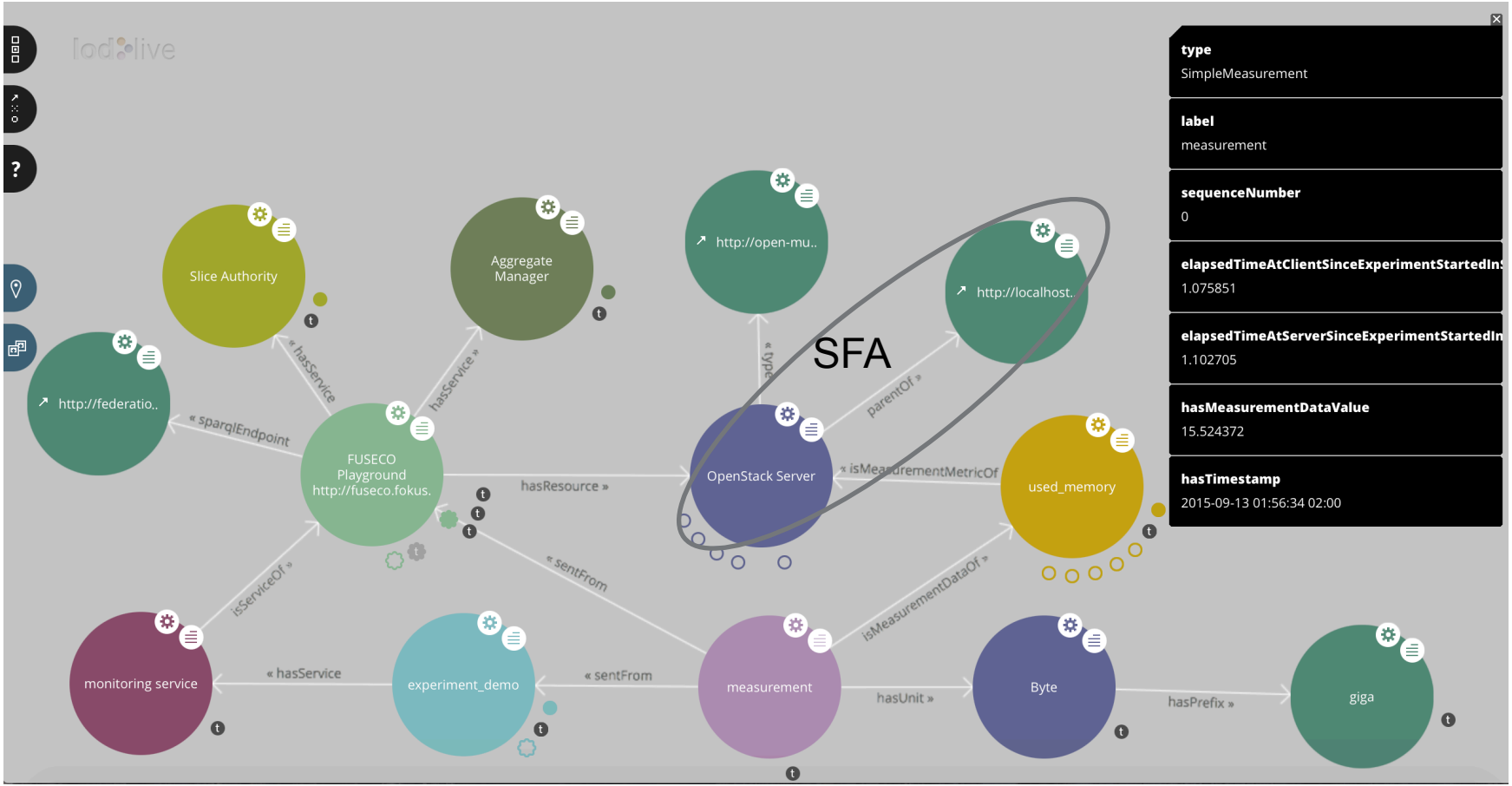
S-OML

Live


Slice Authority
Aggregate Manager
http://open-mu..
http://localhost..
http://federatio..
FUSECO Playground http://fuseco.fokus.
OpenStack Server
used_memory
monitoring service
experiment_demo
measurement
Byte
giga
« hasService
hasService »
« type
parentOf »
« sparqlEndpoint
hasResource »
« isMeasurementMetricOf
isServiceOf »
« sentFrom
isMeasurementDataOf »
« hasService
« sentFrom
hasUnit »
hasPrefix »
type
SimpleMeasurement
label
measurement
sequenceNumber
0
elapsedTimeAtClientSinceExperimentStartedIn
1.075851
elapsedTimeAtServerSinceExperimentStartedIn
1.102705
hasMeasurementDataValue
15.524372
hasTimestamp
2015-09-13 01:56:34 02:00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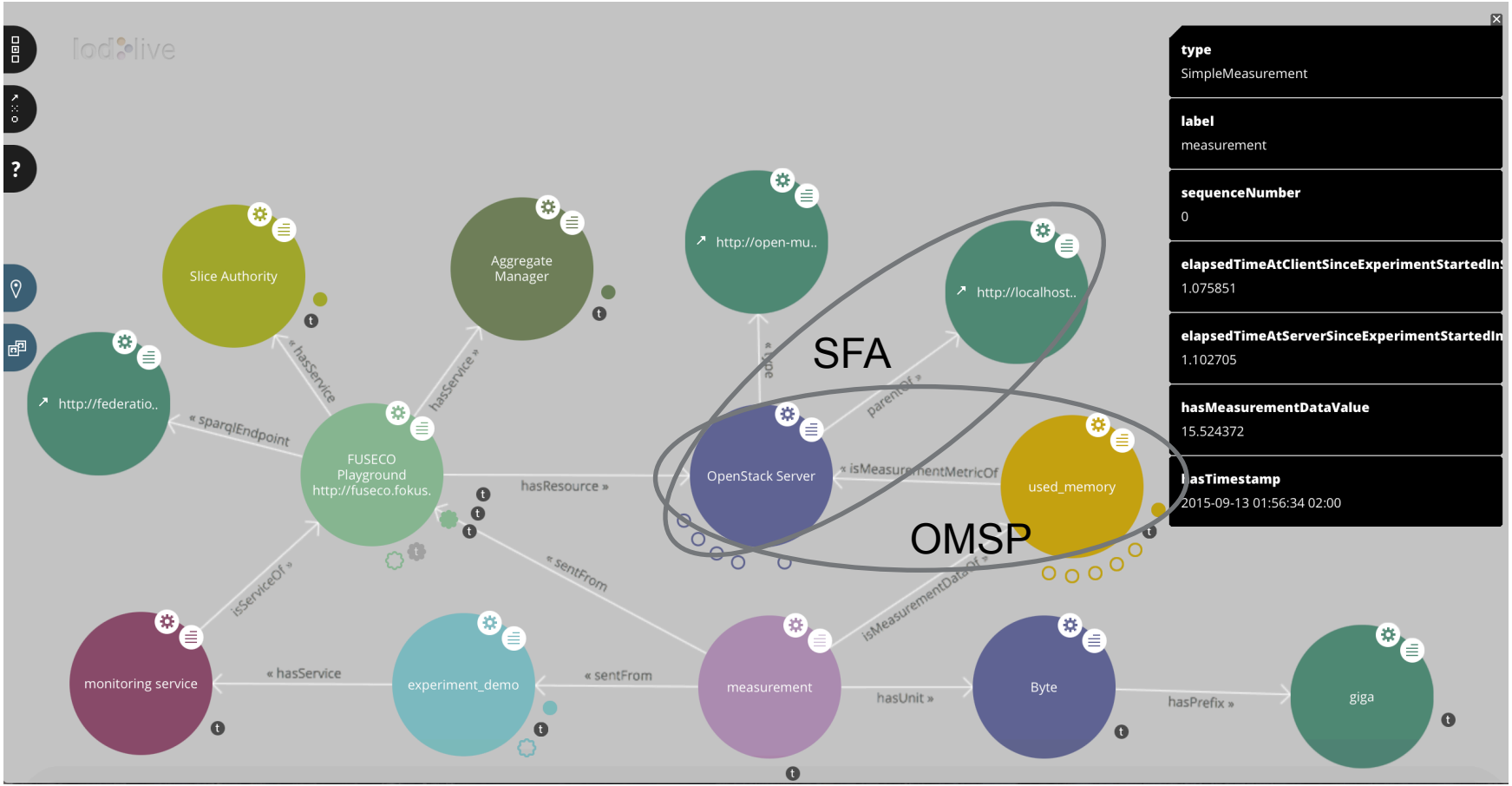
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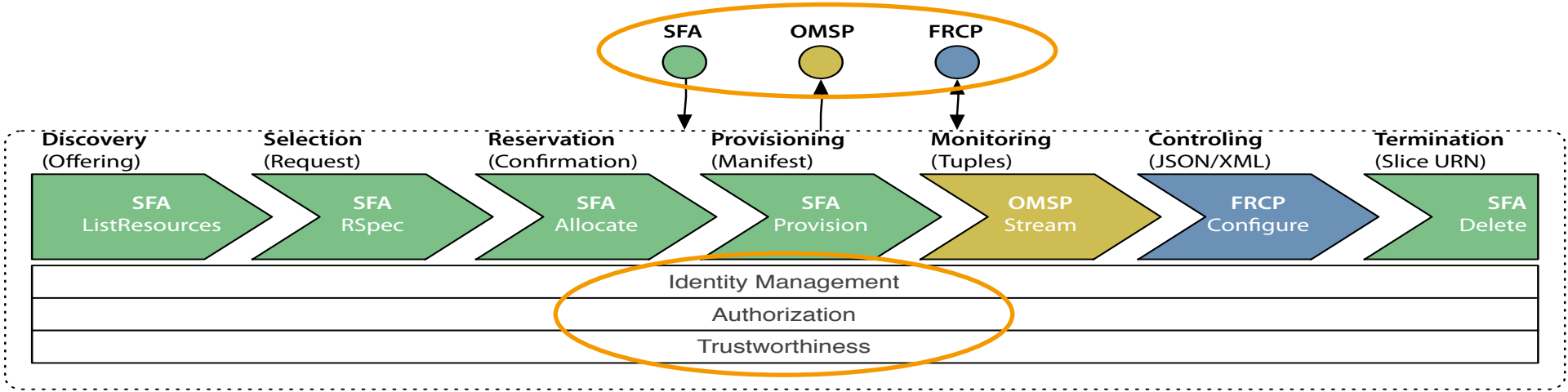
Outlook

INVOLVE THE COMPLETE LIFE-CYCLE



LARGE-SCALE DEMONSTRATION

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EXTEND

Federated HPC (Grid)

Federated Testbeds

Federated Clouds

Federated Networks (SDX)

Federated Things (IoT)

Federated Big Data

Technische Universität Berlin

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STANDARDIZE