

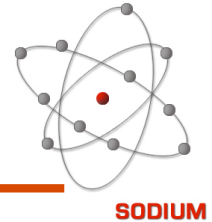
SODIUM

Service Oriented Development In a Unified fraMework (SODIUM)

IST-FP6-004559

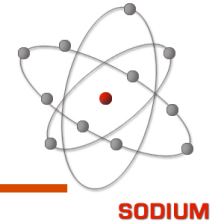
**Prof. Aphrodite Tsalgatidou,
SODIUM Technical Manager
National & Kapodistrian University of Athens
atsalga @ di.uoa.gr**

The Challenge



- *Unification of heterogeneous services and infrastructures (web services, p2p services, grid services, agents, sensors, etc)*
 - support the **discovery and composition of heterogeneous services**, in an **open and unified** manner

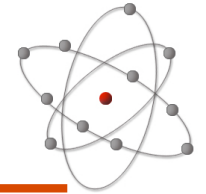
The Status Quo



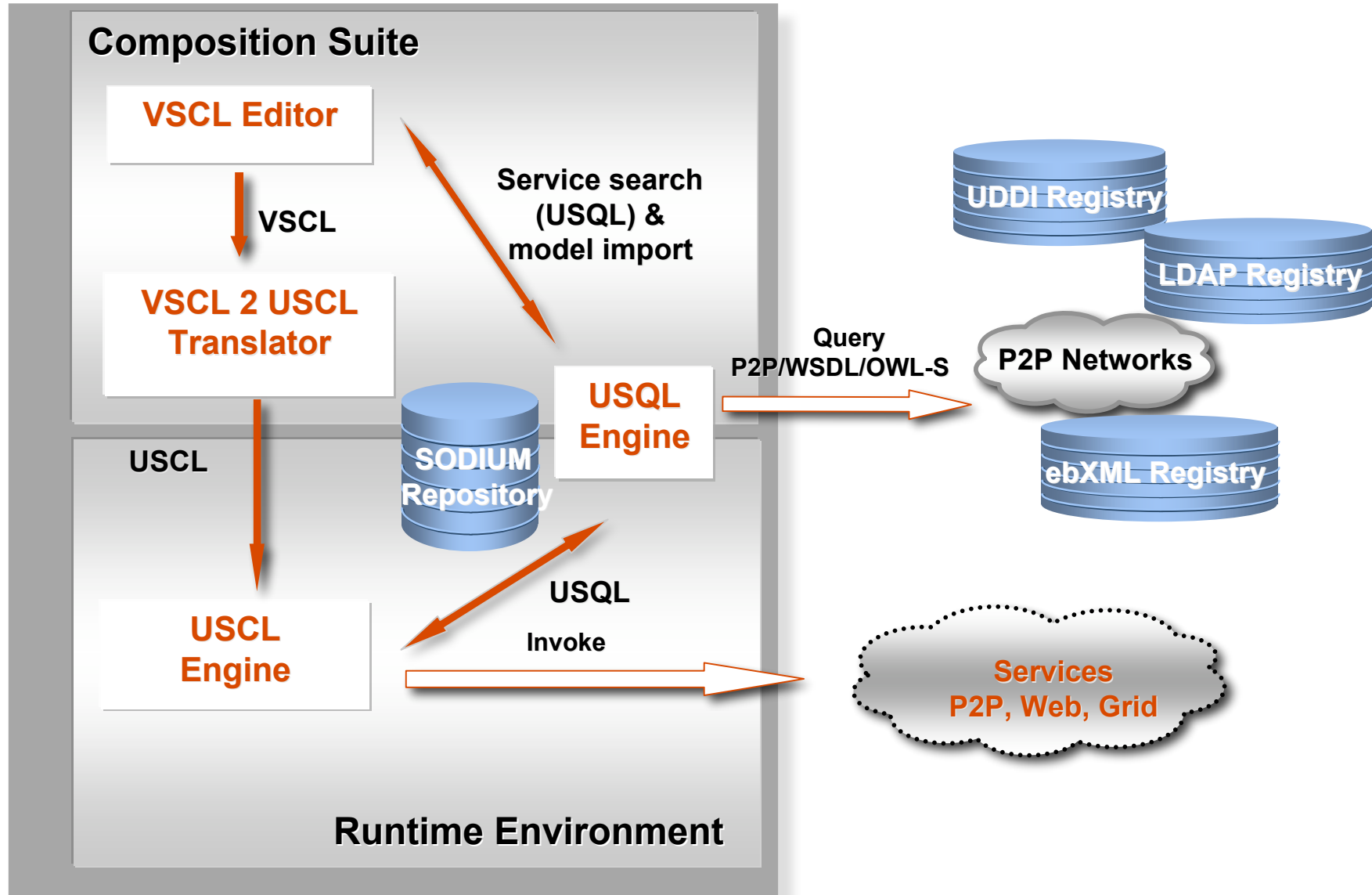
- Independent, non-integrated infrastructures
 - Discovery and Composition of web, p2p and grid services: *heterogeneous, incompatible protocols*

	DISCOVERY	COMPOSITION
WEB SERVICES	WSDL (W3C), OWL-S (W3C), WSDL-S (W3C), WSML (WSMO), UDDI (OASIS), WSIL (IBM and MICROSOFT), ebXML Reg/Rep (UN/CEFACT and OASIS)	BPEL4WS (OASIS), WSFL(IBM), WSCI (Sun etc), XLANG (Microsoft), WSCL (HP), BPML (BPMI), WS-CAF, WS-Transaction
GRID SERVICES	LDAP, GRIP, GRPP, WSRF	GSFL (Workflow framework based on WSFL)
P2P SERVICES	JXTA, P2PS, Edutella, KazaA, Groove, Gnutella, Freenet	

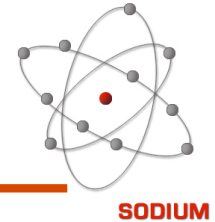
SODIUM Solution



SODIUM

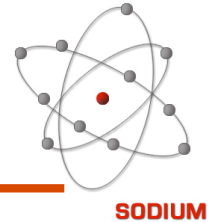


SODIUM Technical Approach



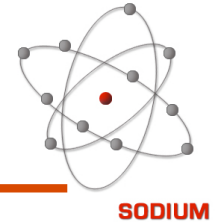
- SODIUM languages (VSCL, USQL, USCL) abiding by a **Generic Service Model (GeSMO)**, which provides
 - A set of **core concepts** that are shared among all types of services
 - A set of **specific concepts** for the distinct characteristics of each service type
- Service *heterogeneity is* met with the use of
 - **Core** functionality and **open** and **flexible architecture** supported by the SODIUM languages and tools
 - **Extensions**, as regards the SODIUM languages
 - **Plug-ins**, as regards the SODIUM tools

Statement

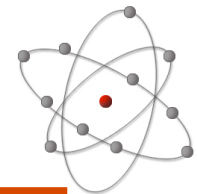


- *The **abstraction** of the SODIUM solution (languages and tools) renders it independent of the various service type-related technologies and standards*
- *The **extensibility** of the SODIUM solution allows for the easy accommodation and support of diverse service types and their related technologies and standards*

Future Challenges



- Extension of the SODIUM Solution (architecture, languages and tools) to provide support for emerging types of services
 - e.g. Sensor/Actuator services, Agent services
- Service Composition and execution
 - Automated/assisted composition of services
 - Composition and monitoring of services based on QoS and runtime information
 - Dynamically adaptable service compositions based on context information
 - Facilitate the exchange of high volumes of data produced/consumed by grid/sensor services
- Service Discovery
 - Enhanced with QoS, security and trust-based information



SODIUM

Thank you for your attention!

www.di.uoa.gr/~afrodite

www.atc.gr/sodium

[atsalga @ di.uoa.gr](mailto:atsalga@di.uoa.gr)