Triple Spaces for an Ubiquitous Web of Services

Reto Krummenacher, Thomas Strang, Dieter Fensel

Reto Krummenacher
reto.krummenacher@deri.org

W3C Workshop on the Ubiquitous Web,
Tokyo, March 9 - 2006
Overview

1. Why Triple Space Computing?
2. Ubiquitous Triple Space Computing (υTSC)
3. Discussion of 5 position arguments
4. Outlook and conclusion
Human Communication
Overview

1. Why Triple Space Computing?
2. Ubiquitous Triple Space Computing (uTSC)
3. Discussion of 5 position arguments
4. Outlook and conclusion

Triple Spaces embody a communication paradigm for *anonymous*, *asynchronous* information exchange through publication that ensures the *persistency* and *unique identification* (URI) of the communicated semantic data.
TSC and $\nu$TSC

Digital Enterprise Research Institute

Location

Conference

Registration

Building Management

Triple Space

Alice

Bob

User Profile
TSC: conceptual architecture

TSC: Austrian funded project (march 2005 – august 2007)

TripCom: EC funded project (april 2006 – march 2009)
Overview

1. Why Triple Space Computing?
2. Ubiquitous Triple Space Computing (uTSC)
3. Discussion of 5 position arguments
4. Outlook and conclusion
Position arguments

1) Merging Ubiquitous computing and Web computing:
   Ubiquitous Web
   
   = Ubiquitous computing + Web computing
   
   = mobility + adaptivity ∩ scalability + global coverage
2) The Web around (Semantic) Web services:

Semantic Web services will be at the core of the processing of vast amounts of heterogeneous pieces of information.
3) **Context-awareness:**

- No Ubiquitous computing without context-awareness!

- Ontology-based context modeling
  - Context Ontology Language (CoOL)

- Taking context information into account allows for optimized service to users and applications.
  - “Not only functionality, but also availability”
Position arguments

4) A Web for machines:

Ubiquitous Web

= WWW as Web for humans +
TSC as a web for machines

= A presentation web + a computation web

= globally accessible and highly scalable networks
5) A flexible coordination paradigm for machines and humans:
A middleware that takes over coordination, mediation, and basic reasoning tasks.
The Ubiquitous Web to fast and flexibly integrate information producers and consumers.
Overview

1. Why Triple Space Computing?
2. Ubiquitous Triple Space Computing (vTSC)
3. Discussion of 5 position arguments
4. Outlook and conclusion
Outlook and Conclusion

- Ubiquitous Web at the convergence of humans’ and machines’ information processing
- Current WWW tailored to human use
- Machines will and have to catch up

- Semantic Web services at the beginning
- Triple Space Computing even more...
Personal Notes

9th Int’l Conference on Ubiquitous Computing (UbiComp 2007)
16.-19. Sept 2007 in Innsbruck, Austria
Thank you.