

# Triple Spaces for an Ubiquitous Web of Services

Reto Krummenacher, Thomas Strang, Dieter Fensel

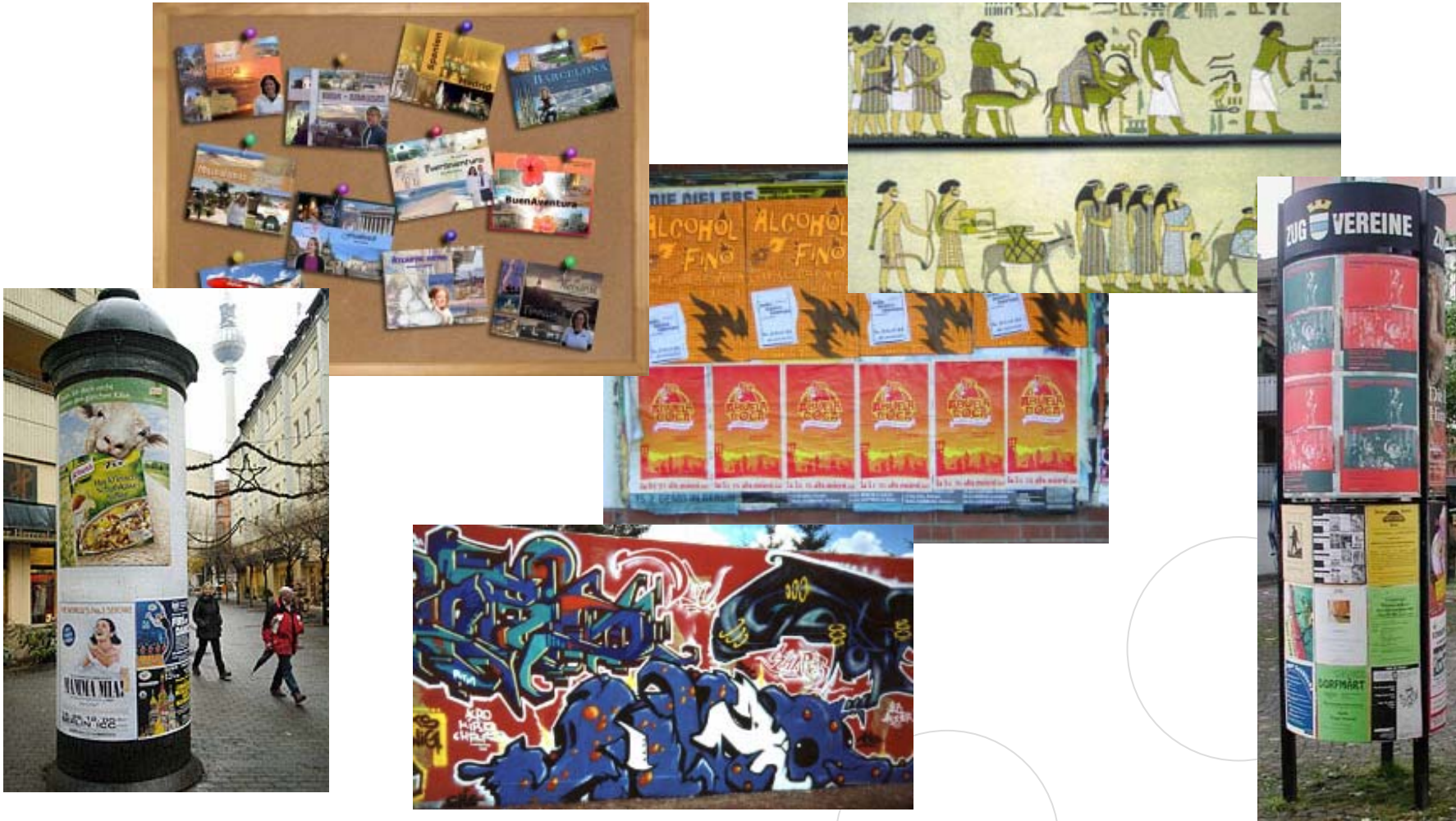
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Tokyo, March 9 - 2006



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

# Human Communication





1. Why Triple Space Computing?
2. **ubiquitous Triple Space Computing (uTSC)**
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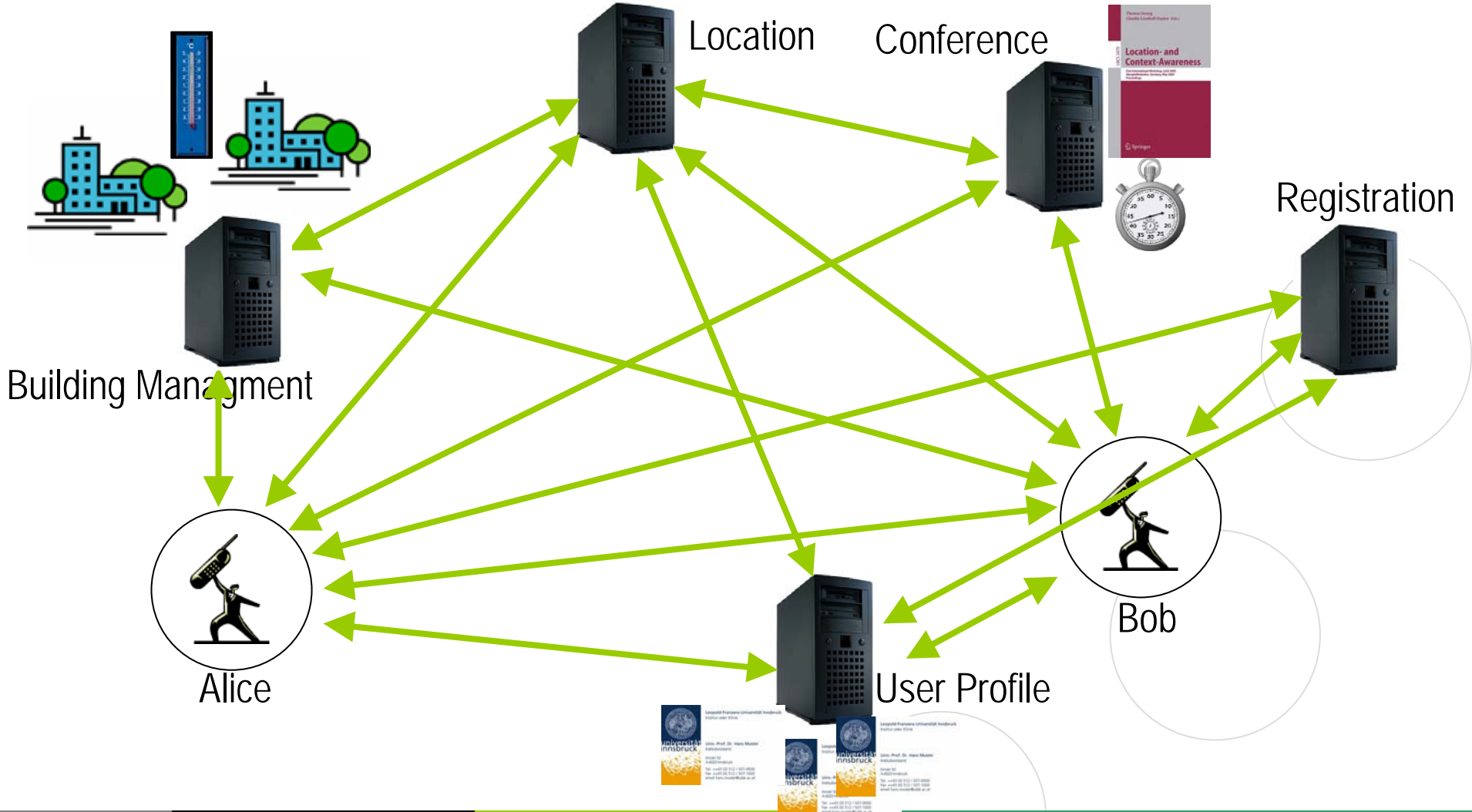
# Triple Space Computing (TSC)



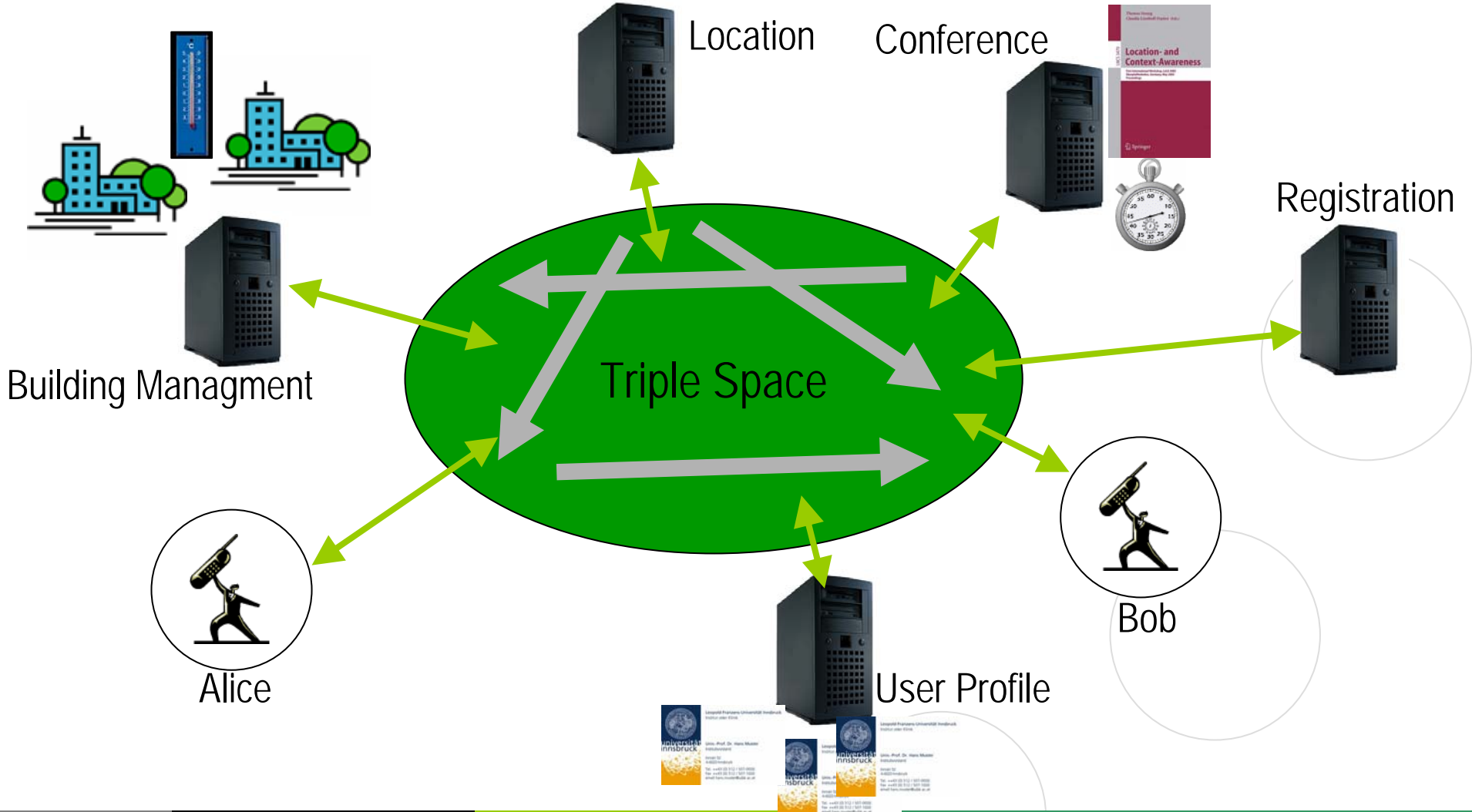
Dieter Fensel, ***Triple-Space Computing: Semantic Web Services Based on Persistent Publication of Information***, Proc. of the IFIP Int'l Conf. on Intelligence in Communication Systems, November 2004.

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.

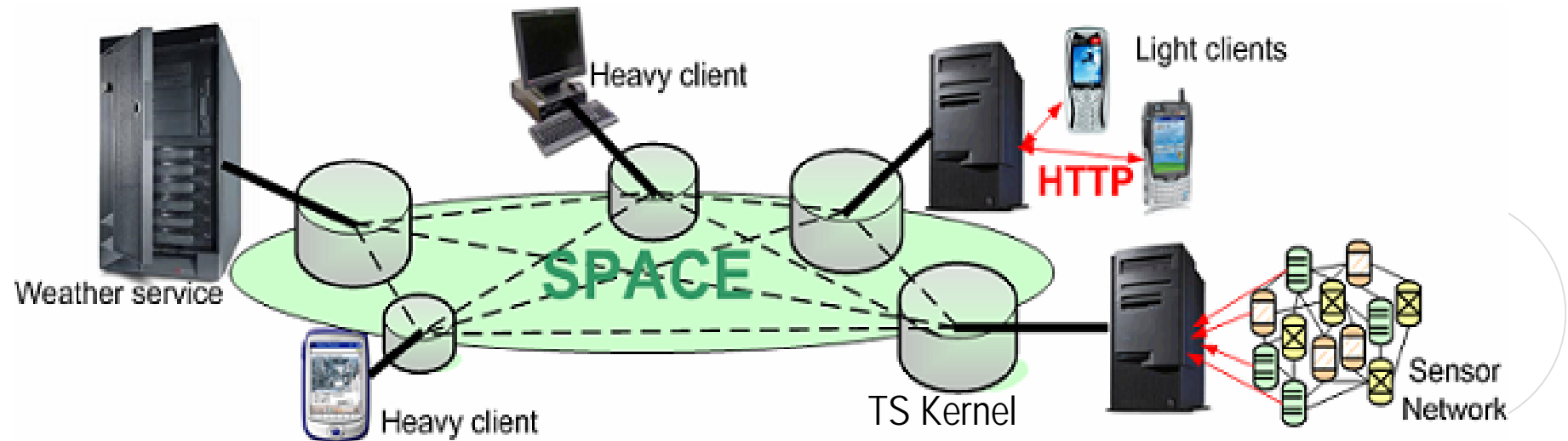
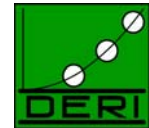
# TSC and uTSC



# TSC and $\mathcal{U}TSC$



# TSC: conceptual architecture



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



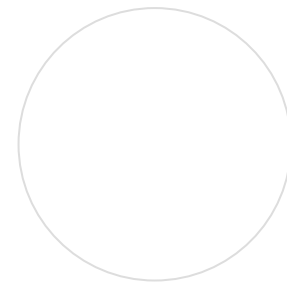
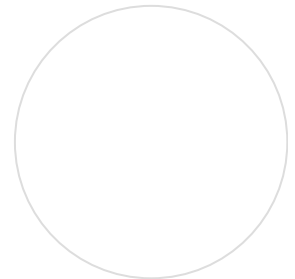
TripCom: EC funded project (april 2006 – march 2009)



# Overview



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





## 1) Merging Ubiquitous computing and Web computing: Ubiquitous Web

= Ubiquitous computing + Web computing

= mobility + adaptivity  $\cap$  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”



This is the official Website of TripCom is to be funded by ti priority 2 Information Society

## 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

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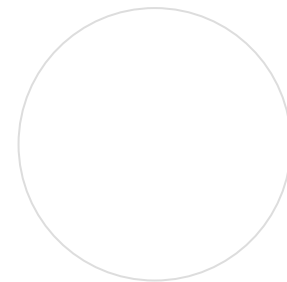
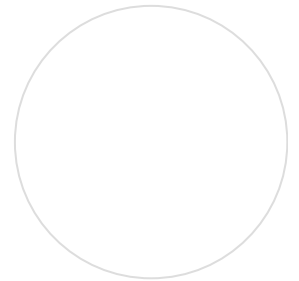
## 5) **A flexible coordination paradigm for machines and humans:**

A middleware that takes over coordination, mediation, and basic reasoning tasks.

The Ubiquitous Web to fast and flexibly integrate information producers and consumers.



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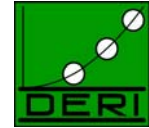


# Outlook and Conclusion

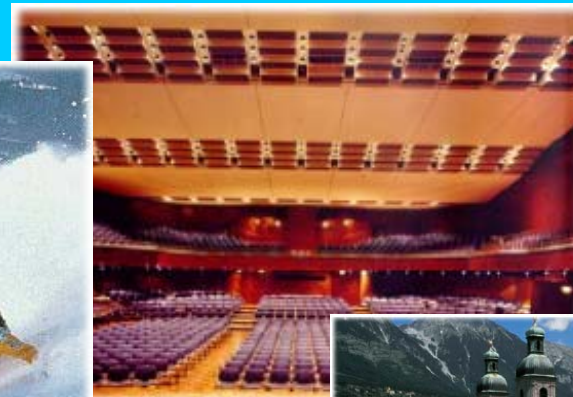


- Ubiquitous Web at the convergence of humans' and machines' information processing
- Current WWW tailored to human use
- Machines will and have to catch up
- Semantic Web services at the beginning
- Triple Space Computing even more...





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





**Thank you.**

