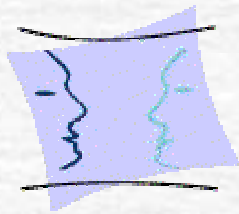


Context-Aware Infrastructures for Mobile Services



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Overview

- Context
- Services
- Context-aware service discovery and orchestration
- Scenario

Context

Context (Dey):

Context is any information that can be used to characterize the situation of an entity. An entity is a person, place or object that is considered relevant to the interaction between a user and an application, including the user and application themselves.

Context-Awareness:

A system is context-aware if it uses context to provide relevant information and/or services to the user, where relevancy depends on the user's task.

That's much more than getting data from physical sensors!

- Exchange server, Summer School Schedule
- Users' habits

Services

- Small set of specialized functions
 - reinventing something new?
 - Web-services
 - HTTP, XML, SOAP -> transport, data, function invocation
 - WSDL -> service description
 - UDDI -> service discovery
- What for?
 - Context
 - Information on users' situation, Summer School Schedule
 - User information
 - Personal data, User Preferences, Single Sign-In
 - Information services
 - Time tables, Floor plan

Service Discovery/Orchestration

Discovery in environment with mobile entities

- Many queries -> publish/subscribe characteristics
- Context-aware queries -> nearby services
- Quality of services -> refresh period, quality of results

Orchestration/Usage of services

- Plug together for powerful applications
- Is there need to do this context-aware?
- Standardized interfaces

Scenario

Reminder

- Generic application can be used anywhere
- Uses several context sources
 - Exchange
 - Location
 - Time
- Uses several services
 - Looks for local public transport timetables (bus, tram, subway)
 - Mapping service

Scenario

[kolloquium] Einladung zum Kolloquium am 5.8.2002 - Termin

Datei Bearbeiten Ansicht Einfügen Format Extras Aktionen ?

Speichern und schließen Drucken Seriendruck... Teilnehmer einladen...

Termin Terminplanung

Betreff: [kolloquium] Einladung zum Kolloquium am 5.8.2002

Ort: Raum S1 15/133

Beginnt um: Mo 05.08.2002 16:15 ☐ Ganztägig

Endet um: Mo 05.08.2002 17:45

☒ Erinnerung: 30 Minuten ☐ Anzeigen als: ☒ Mit Vorbehalt

2. Darmstadt Alexanderstraße/TU Darmstadt Luisenplatz	<input checked="" type="checkbox"/>	Mo.05.08.	ab 16:06 an 16:10	00:04
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RMV.DE - Microsoft Internet Explorer

Datei Bearbeiten Ansicht

Zurück Zurück

Adresse http://www.rmv.de/

Google

Fahrplanauskunft

von

Ort/Stadt Darmstadt

Haltestelle Alexanderstraße

nach

Ort/Stadt Darmstadt

Haltestelle Luisenplatz

Datum 05 08 02

Uhrzeit 16 15

Abfahrt ☐ Ankunft ☒

MEHR OPTIONEN >>>

ABFRAGEN >>>



Scenario

Benefits

- Context aware reminder.

Problems

- Service Interface

- One interface for all public transport information services world wide...

- Context Representation

- Current location -> time table input format
- Time table output format -> reminder format

Literature

- Anind K. Dey: *Providing Architectural Support for Building Context-Aware Applications*. PhD thesis, Georgia Institute of Technology, November 2000.
- Bill N. Schilit: *A System Architecture for Context-Aware Mobile Computing*. PhD thesis, Columbia University, New York, NY, US, 1995.
- Thomas P. Moran, editor: *Human-Computer Interaction*, volume 16 of *A Journal of Theoretical, Empirical, and Methodological Issues of User Science and of System Design*. Lawrence Erlbaum Associates, Mahwah, New Jersey, Context-Aware Computing edition, 2001.
- *Special Issue on Context-Aware Computing*, volume 5 of *Personal and Ubiquitous Computing*. Springer Verlag, 2001.

Thank you for your attention!

Feedback welcome!