**ECA** etourism competence center austria

# Exploiting E-C-A Rules for Defining and Processing Context-Aware Messages

**International RuleML Symposium on Rule Interchange and Applications**

**Orlando, Florida**
**2007-10-26**

**Thomas Beer**, Jörg Rasinger, Wolfram Höpken, Matthias Fuchs, Hannes Werthner

# Outline

- **Motivation**

- **Approach**

- **Example Push Messages**

- **E-C-A Rules within CAIPS**

- **CAIPS Rule Engine**

- **Rule Wizard**

- **Conclusion & Future Work**

www.etourism-austria.at                    © copyright ECCA

ECCA etourism competence center austria

# Motivation

- **Changing customer needs**
  - customer (tourists) expects *ubiquitous* access to *relevant* information during all trip phases
  - information has to be accessible *anytime* and *anywhere*

- **Problems arising**
  - *information overload*
  - *information retrieval effort*

ECCA etourism competence center austria

# Approach

- CAIPS actively provides information to the customer (via SMS, E-MAIL, MMS etc.)

- *Tailored messages*: provide right (personalized) information, within the right situation (*context*)

  - User's Context:
    - user master-data: e.g. gender
    - environment: e.g. weather
    - travel-profile: e.g. business traveler
    - time

ECCA etourism competence center austria

# Example Push Messages

- Tourists are provided with detailed information about sights they are approaching

- Tourists are actively informed about suitable indoor events because of bad weather forecast

- Tourists are actively informed about alternative music events when their concert is postponed or cancelled

ECCA etourism competence center austria
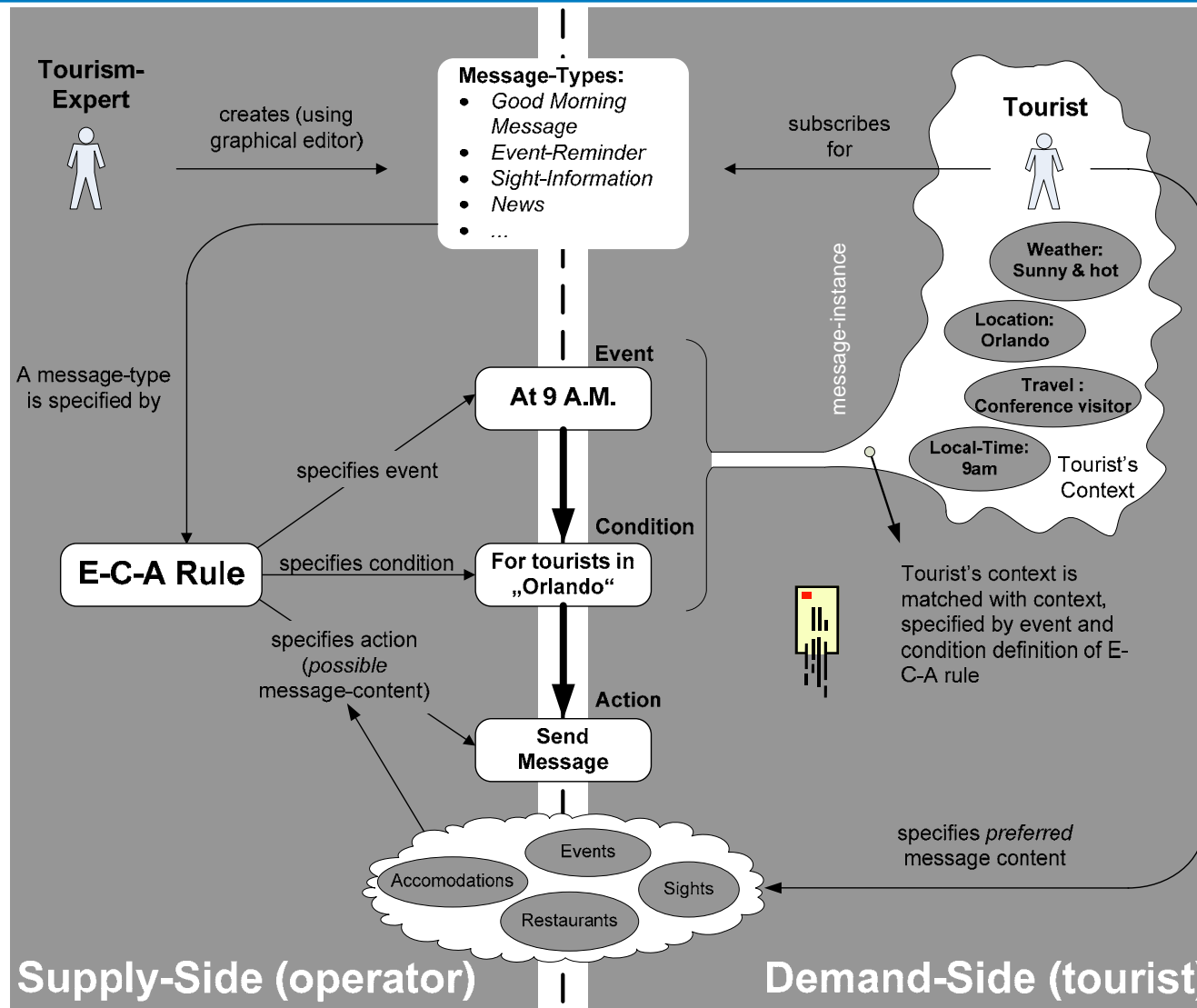
# Rules within CAIPS

Two stakeholders within CAIPS:

- Application Operator (message supplier)
- Customer (tourist)

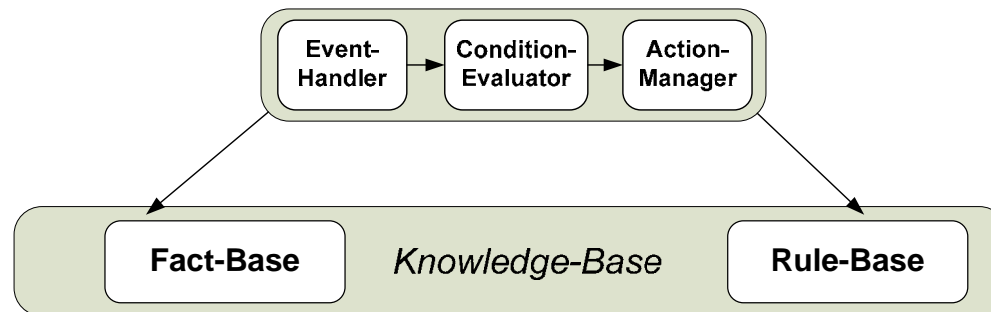Key requirements when designing CAIPS:

- Req. 1:     Extendibility
- Req. 2:     Ease-of-Use

ECCA etourism competence center austria

# Rules within CAIPS



**Tourism-Expert**

creates (using graphical editor)

**Message-Types:**
- *Good Morning Message*
- *Event-Reminder*
- *Sight-Information*
- *News*
- *...*

subscribes for

**Tourist**

message-instance

**Weather:** Sunny & hot

**Location:** Orlando

**Travel :** Conference visitor

**Local-Time:** 9am

Tourist's Context

A message-type is specified by

**Event**

**At 9 A.M.**

specifies event

**E-C-A Rule**    specifies condition    **Condition**    **For tourists in „Orlando"**

Tourist's context is matched with context, specified by event and condition definition of E-C-A rule

specifies action (*possible* message-content)

**Action**

**Send Message**

specifies *preferred* message content

Accomodations    Events    Sights    Restaurants

**Supply-Side (operator)**    **Demand-Side (tourist)**

**ECCA** etourism competence center austria

# CAIPS Rule-Engine

- Based on:
  - **Event-Notification Services**
  - **Standard query languages**



- CAIPS quantity analysis:
  - Rules: 5-10 Rules
  - "Facts": ca. 40 User, ca. 4000 tourism-products, hourly weather-forecast for 9 cities
  - Events:
    - Time based events: 6
    - Location based events (coming up): ca. 200

© copyright ECCA

ECCA etourism competence center austria

# CAIPS Rule Wizard

GutenMorgenPost ✕    Nachricht Senden

## Allgemein

*GutenMorgenPost ✕    Nachricht Senden

## Event-Auswahl

Event Instanz Auswahl     GMP_Trigger                             ▼

*GutenMorgenPost ✕    Nachricht Senden

## Kriterien-Auswahl

Kriterien-Auswahl:

Parameter:

*GutenMorgenPost ✕    Nachricht Senden

## Vordefinierte-Inhalte

| **Event** | **Sight** |
|---|---|
| ☑ Veranstaltungen empfehlen   + | ☑ Sehenswürdigkeiten empfehlen   + |

Statement ausblenden

**Wetterbericht**

☑ CityWetter auswählen   +

Allgemein | Event-Auswahl | Kriterien-Auswahl | Vordefinierte-Inhalte | Nachrichten-Inhalt

Allgemein | Event-Auswahl | Krite

ECCA   etourism competence center austria

# Conclusion & Future Work

- Tourists are provided with tailored messages related to their context

- The messages (i.e. the message types) are created in a poor declarative way by the application-operator

- E-C-A rules are utilized to define message types (design-time) and send message instances (run-time)

- CAIPS Rule-Engine is based on event-notification services and standard query-languages

- Message content is created using recommender systems


- Further planned CAIPS implementations:
  - UEFA European Championship 2008
  - Dolomiti Superski

www.etourism-austria.at

© copyright ECCA

ECCA etourism competence center austria

**ECA** etourism competence
center austria

# Thank you!

**Exploiting E-C-A Rules for Defining and Processing Context-Aware Messages**

**International RuleML Symposium on Rule Interchange and Applications**

Thomas Beer
thomas.beer@etourism-austria.at

Orlando, Florida
2007-10-26