WP6 Case Study
Customer Notification Agent for Financial Overdraft

S. Losada, O. Corcho, R. Benjamins
Semantic Web Services Architecture

averageCost::
  amount=>float,
  currentDate=>date,
  endDate=> date,
  initialDate=>date

estimationProvider:capability.
estimationProvider\[postCondition\] :-
  _AnyEstimation:averageCost\[
    currentDate->CurrentTime:date,
    endDate->EndTime:date,
    initialDate->InititalTime:date
  \],
  before(InitialTime,CurrentTime),
  before(CurrentTime,EndTime).

myGoal:goal\[postCondition->myEstimation\].
myEstimation:averageCost\[
  currentDate->_#:date\[
    year->2005,monthOfYear->2,dayOfMonth->24\],
  endDate->_#:date\[
    year->2005,monthOfYear->4,dayOfMonth->15\],
  initialDate->_#:date\[
    year->2005,monthOfYear->1,dayOfMonth->18\],
  amount->10
\].
Semantic Web Services Architecture

myGoal: goal[postCondition->myNotification].
myNotification: notification[
  nt_from-> _#,
  nt_recipient-> _#,
  nt_body: "Possible overdraft situation",
  nt_date-> _anydate:dateAndTime[ date-> _#:date[dayOfMonth -> 24, monthOfYear -> 2, year -> 2005 ],
  time-> _#:time[ hourOfDay -> 13, minuteOfHour -> 45, secondOfMinute -> 30 ],
  paymentMode-> creditCard,
  nt_cost->0.2,
].

Mediation needed

smsProvider: capability.
smsProvider[postCondition]: -
  _AnyNotification: notificationBySMS[ phn_number-> Anynumber, receiptAcknowledgement -> 'no',
  date-> Time:dateAndTime, content-> AnyMessage:message, payment-> _anyPayment:payment[paymentMode-> creditCard],
  is_charlist(AnyMessage.msg_body, AnyMessageLength)@prolog(),
  AnyMessageLength < 800,
  Tokens is '//'(AnyMessageLength,160)@prolog()+1,
  Cost is Tokens * 0.05,
  Payment.cost >= Cost, secondsBetween(currentDate, Time, X) X < 12*3600.

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Semantic Web Services Architecture

openSession, getAccounts, getInvoices, getBalance, closeSession

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### Conclusion

- **Application in the personal e-banking domain**
  - Reuse of current commercial iSOCO’s application: GetSee®
  - Integration of Semantic Web Services and actual Web services

- **Discovery**
  - F-Logic based (one-shot discovery, more precision needed than with DL-based discovery)
  - Integrated with ontology mediation

- **Orchestration**
  - Hard-coded in sentinel agent
  - Web services selected at run-time by means of discovery and mediated before execution
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