Service-Based Infrastructure for User-Oriented Environmental Information Delivery

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The PESCaDO Consortium

ENVIP 2010   Bonn, 07 October 2010

The Consortium

1. Universitat Pompeu Fabra (UPF)
2. Fraunhofer IOSB
3. Finnish Meteorological Institute (FMI)
4. University of Stuttgart (USTUTT)
5. Fondazione Bruno Kessler (FBK)
6. Centre for Research and Technology (CERTH)
7. Helsinki Region Environmental Services Authority (HSY)

Outline of the Talk

- Introduction: Why PESCaDO, what we want to do and why we think we can do it

- Working model of PESCaDO:
  Service-based Infrastructure

  ⇨ Main services
  ⇨ Sample workflow

- Timeline of the project work

Why PESCaDO?

Citizens are increasingly aware of the influence of air quality and meteorological conditions on the quality of their life and demand for high quality environmental information that is tailored to one's specific context, background and needs.

Personalized, supportive and maximally comprehensive information is needed

Some observations

Where to get the data from?

- The web hosts a large number of meteorological, traffic, and somewhat less) air quality services

- Most of the data are in webpages, but also some web-service supported delivery can be found

The quality of the data may vary significantly!!!

What to present to the addressee?

- The information for which a given user is looking depends on their needs / interests

- In general, the content that is relevant to a given user in a given context can be derived from the data and the background
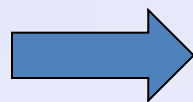
PESCaDO

SEVENTH FRAMEWORK PROGRAMME

What we want to do and why we can do it

- Search of environmental services in the web **CERTH, IOSB**

- Extraction of the data from webpages and data retrieval via webservices **FBK**

- Orchestration of services and data selection and fusion (using uncertainty and confidence metrics) **IOSB, FMI**

- Knowledge-based assessment of the data with respect to the needs of the addressee in question **FBK, FMI, HSY**

- Selection of user relevant content and its delivery using state-of-the-art information production techniques **UPF, FMI, HSY**

- Involvement of the service provider / end user **USTUTT, UPF**

PESCaDO

SEVENTH FRAMEWORK PROGRAMME
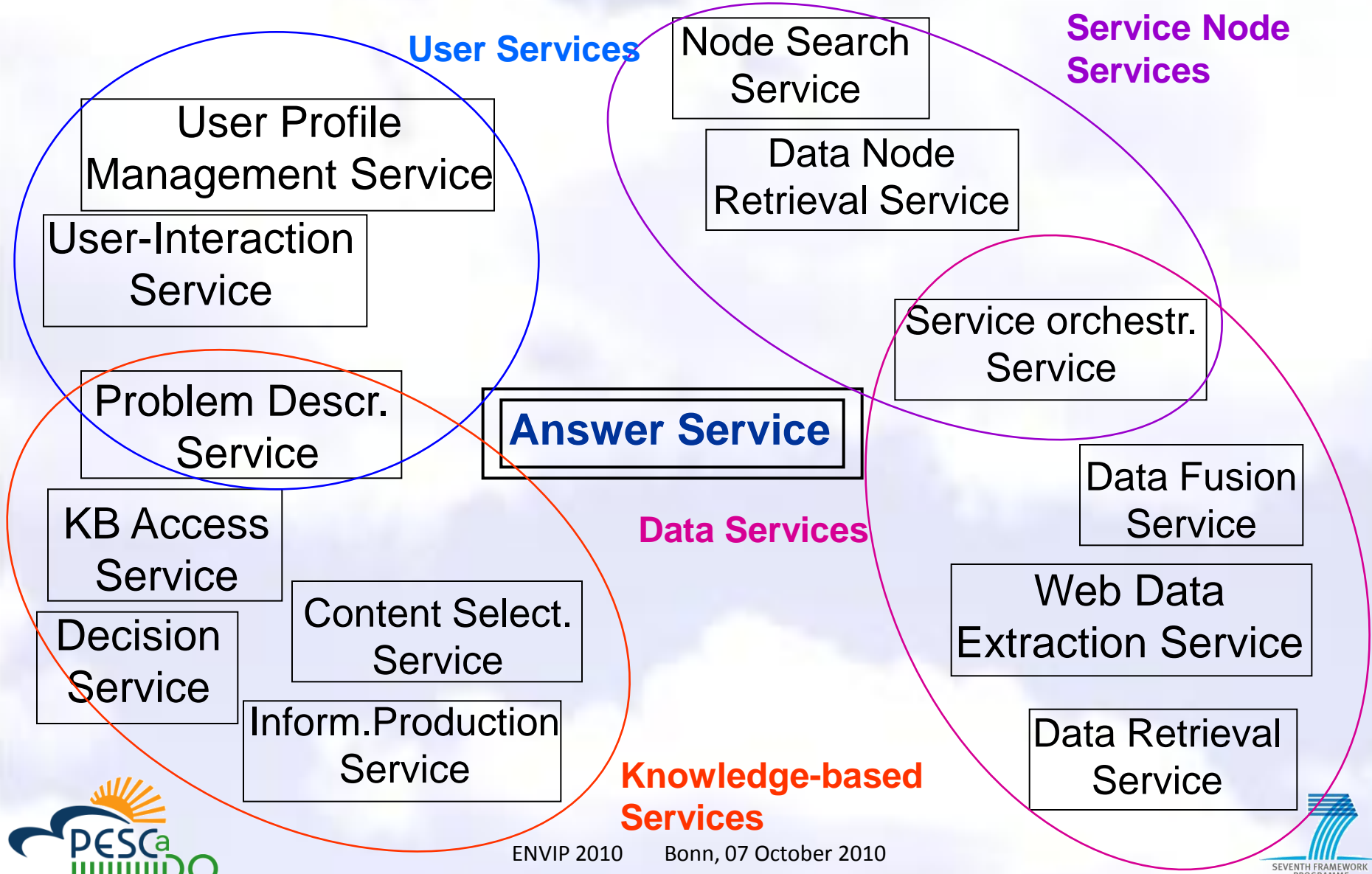
How to realize it?

Some facts

- The tasks can be broken down to "elementary standalone" modules

- Most of the tasks surface in (a possibly modified form) in other applications as well

- The distributed structure of the IT-providers in the Consortium favors a distributed architecture
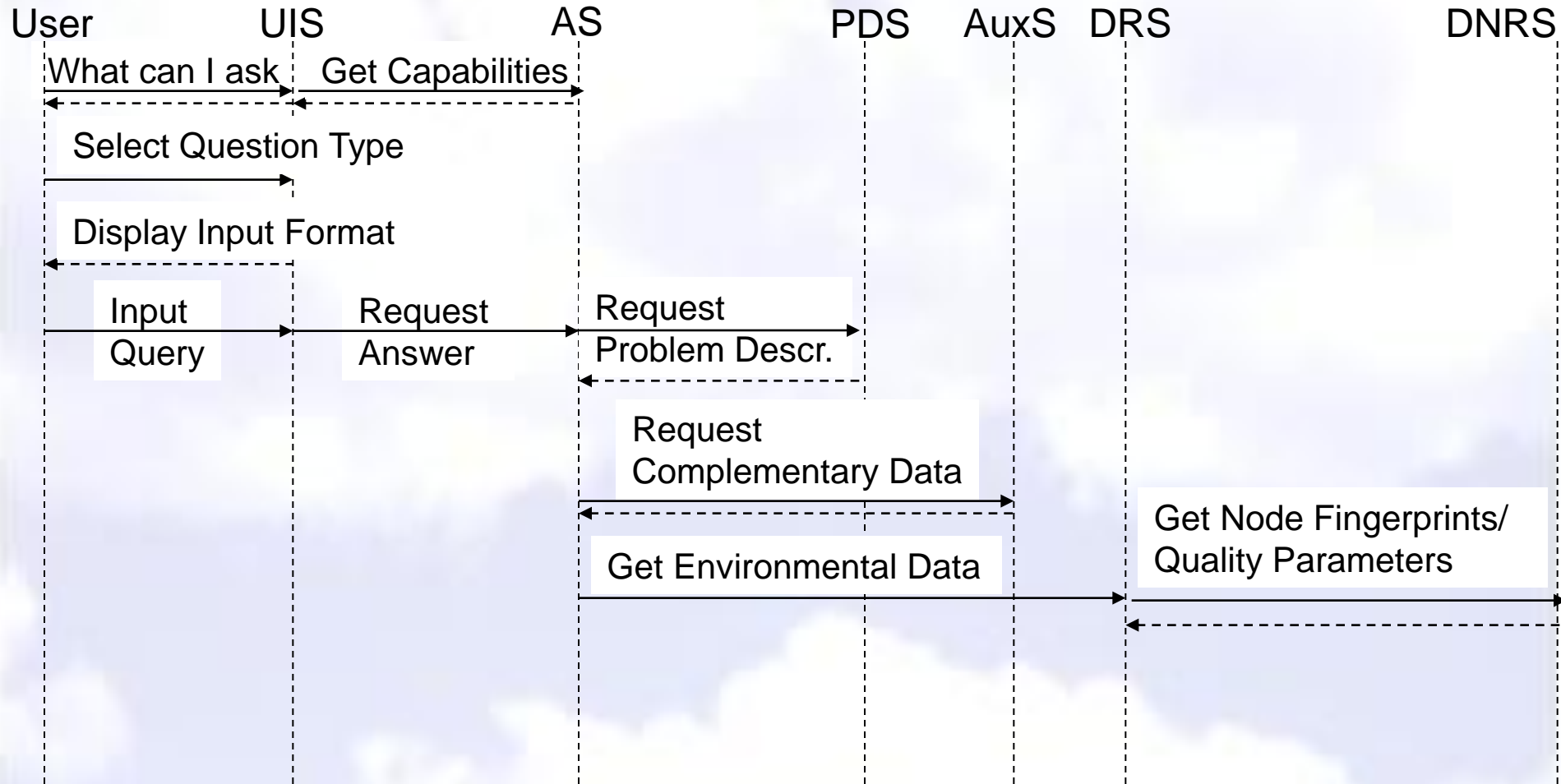
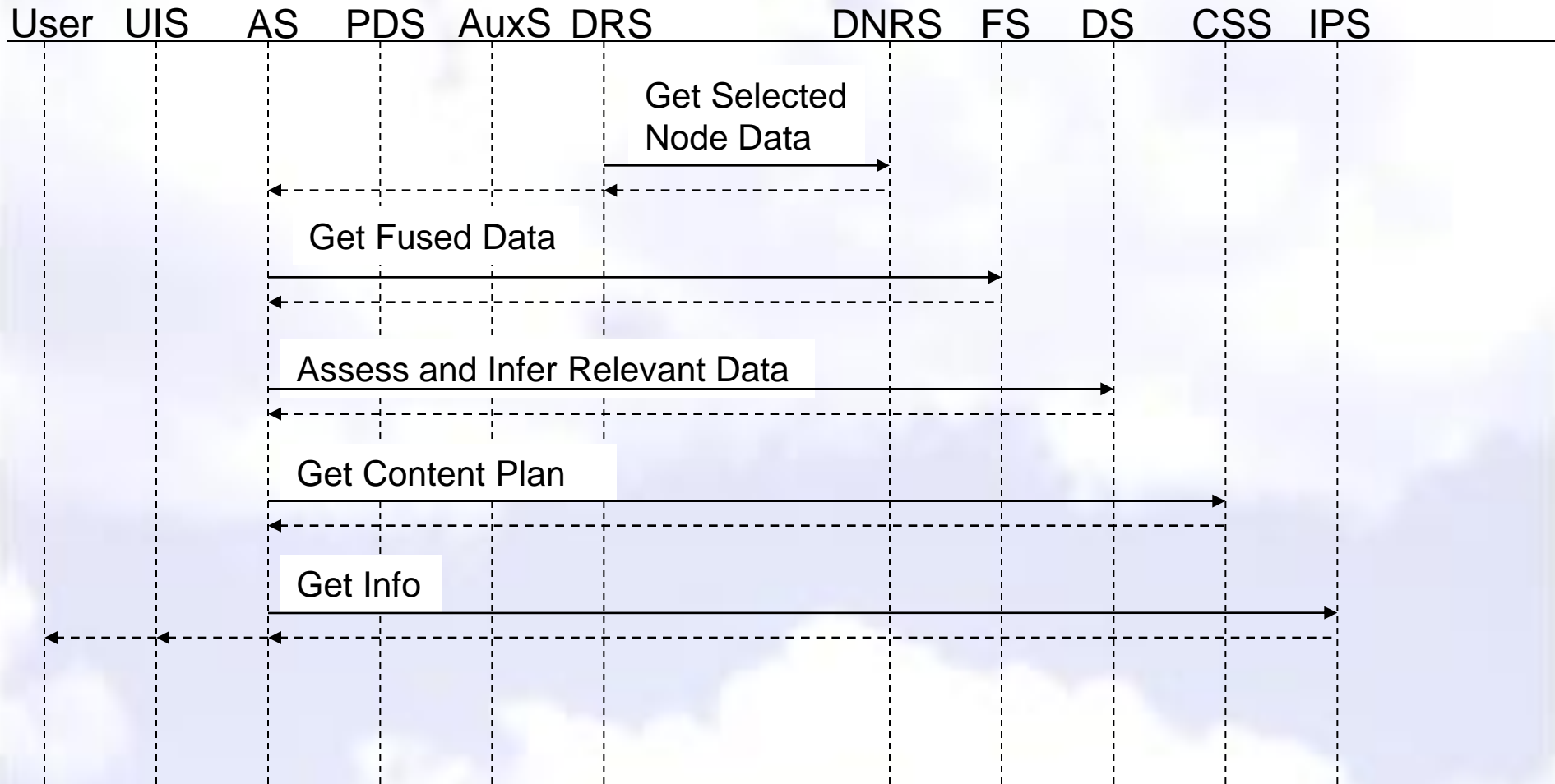→ A service-based infrastructure seems to suit us best

Service-based infrastructure

User Services

Service Node Services

Node Search Service

User Profile Management Service

Data Node Retrieval Service

User-Interaction Service

Service orchestr. Service

Problem Descr. Service

Answer Service

KB Access Service

Data Services

Data Fusion Service

Decision Service

Content Select. Service

Web Data Extraction Service

Inform.Production Service

Knowledge-based Services

Data Retrieval Service

Sample Execution of the services, 1

Sample Execution of the services, 2

User   UIS   AS   PDS   AuxS DRS   DNRS   FS   DS   CSS   IPS

Get Selected
Node Data

Get Fused Data

Assess and Infer Relevant Data

Get Content Plan

Get Info

Time line of the project work

- Currently, we are in our first SW-development cycle

- First operational prototypes of most of the services are to be expected by the end of 2010

- First complete prototypical implementation of PESCaDO is expected by June 2011

In the meantime...

- Exchange of ideas and collaboration with other Consortia in selected fields (such as, e.g., uncertainty metrics)