PortDial: Language Resources for Portable Spoken Dialogue Systems

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Spoken Dialogue Systems

DATA

1. Speech recordings (used for training acoustic models)
2. Text data (used for training language models)
3. Ontologies (used to define application domain)
4. Grammars (used for recognition)
   etc.

Challenge

A major roadblock in spoken dialogue system (SDS) design is the lack of linguistic resources that would enable the rapid porting of speech services to new domains and languages

PortDial Objectives

- Devise machine-aided methods for creating, cleaning-up and publishing multilingual domain ontologies and grammars for SDS prototyping

- Create a platform that supports cost-effective language resource building for the domain and language porting scenarios

- Create and support a sustainable pool of users that contribute to a linguistic resources data exchange

Main Innovations

Technological Innovation:

Combining knowledge-based and data-driven approaches for ontology and grammar induction from web-harvested data

Market Innovation:

1. Speech services prototyping/porting platform reduces time-to-market and barrier-to-entry

2. Spoken dialogue resources/data as a service

Partners

- Expertise: language engineering, spoken dialogue systems, semantic web, speech services, semantic networks, linked-data
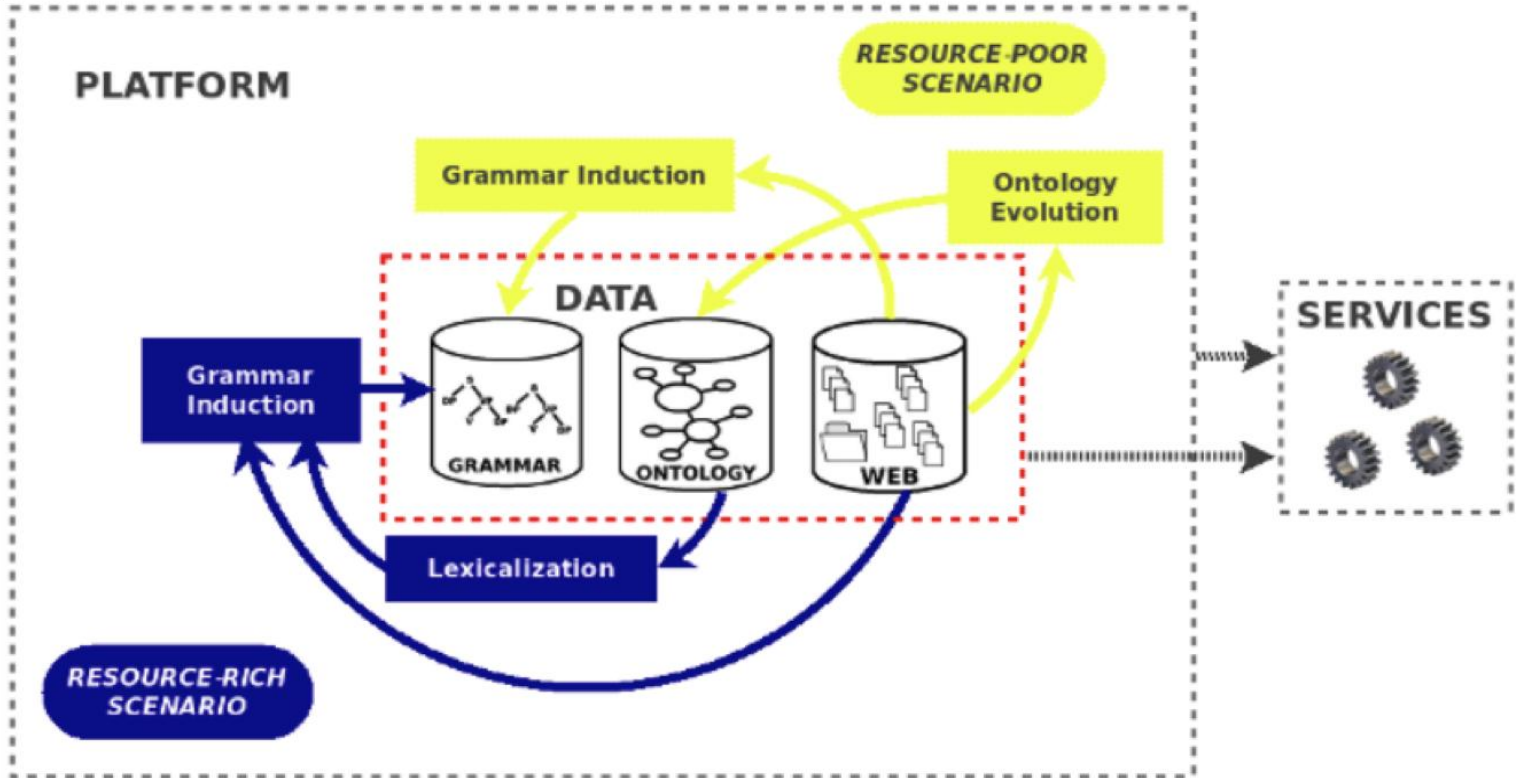
PortDial Scenarios

- Porting to a new application domain
  - Focus on adaptation
- Porting to a new language
  - Focus on translation
- Resource-rich scenario
  - Focus on reusability/adaptation of existing resources
  - Use targeted web mined data to enrich resources
- Resource-poor scenario
  - Focus on data-driven bottom-up creation of resources using the web

Main Concept

Main Outputs

- A commercial platform for rapid prototyping of speech service resources for new domains and languages

- A collection of multilingual speech service resources (ontologies, grammars) for entertainment, banking and customer service domains

- Languages covered: English, German, Italian, Spanish, Greek, Turkish, Hebrew

Target Groups

- **SMEs** worldwide in the mobile application development industry lacking the expertise/ resources to develop speech services in-house

- **Non-commercial actors** including the research community that can maintain and enrich the free version of the data pool

Impact

The SDS linguistic resources will lower the barrier to entry for European SMEs to speech services, allowing for inexpensive proof-of-concept demonstrator development, opening up new markets and application domains.