Global WordNet Tools

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Outline

1. Global WordNet Grid
2. DEB II Development Platform
3. DEBGrid Design and Implementation
4. Conclusions and Future Directions
Global WordNet Grid

- the idea first introduced at GWC 2006 in Korea by P. Vossen, A. Pease and Ch. Fellbaum (GWA)
- today:
  - more than 50 national wordnets
  - many of them not freely available due to licence restrictions
  - some are linked to the Princeton WordNet
- in the Global WordNet Grid:
  - multilingual database of WordNets linked to a common ontology
  - provides common subset of concepts/synsets in all languages
  - publicly accessible
  - maintained by GWA, software developed by Masaryk University on the DEB II Platform
DEB II Development Platform

DEB – Dictionary Editor and Browser

- platform for dictionary writing systems development
  - basically any XML data
  - strict client-server architecture

- server
  - server side modules (servlets in Ruby)
  - database backend (Oracle Berkeley DB XML)

- client
  - simple functionality
  - graphical interfaces (Mozilla/Firefox extensions)
  - web interfaces

- freely available – http://deb.fi.muni.cz:
  - 8 servers installed world-wide (Brno, Prague, Amsterdam-UvA, Amsterdam-VU, Poznan, Pretoria, Budapest, Ljubljana)
  - the Brno server – 402 users from 14 domains/countries
Outline

1. Global WordNet Grid
   - Global WordNet Grid

2. DEB Development Platform
   - DEB Development Platform

3. DEBGrid Design and Implementation
   - DEBVisDic
   - DEB WordNet Storage
   - DEB WordNet Presentation

4. Conclusions and Future Directions
   - Conclusions and Future Directions
DEBVisDic

- reimplementation of WordNet editor VisDic (off-line, local processing)
- contains all the main features present in VisDic – advanced WordNet browsing and editing
- adds Internet distributed architecture
- adds connection to other resources (e.g. morphological analyzer, dictionaries, Visual Browser, . . .)
- used for preparation of new Polish, Hungarian, Dutch (Cornetto), Nepalese, Afrikaans, . . . WordNets
POS: n ID: ENG20-00020486-n
Synonyms: 추상적 개념:1
Definition: a general concept formed by extracting common features from specific examples

Querying a dictionary is complete. Item(s): 6
DEB WordNet Storage

A WordNet in the Grid can be physically stored:

i) on the central server
   - traditional DEBVisDic setup
   - offers the best performance

ii) on a DEB server located at the WordNet owner’s institution
   - the Central Grid server has only the knowledge of which server
     to contact
   - all queries are dynamically resolved over the Internet
   - can be slower
   - the WordNet owner has full control over the displayed data and
     access permissions

iii) a mixed solution – some WordNets are stored on central server
    and some are stored on their respective owners’ servers.
DEB WordNet Presentation

each WordNet in the Grid can be presented to the Grid users as:

a) **simple HTML interface** working in any web browser
   - using XSLT templates, several different views – from a terse view up to a detailed view
   - best for public anonymous access to the Grid

b) **using the full DEBVisDic application**
   - needs to be installed
   - offers much more complex functionality than the web access
   - the possibility to edit the data (with the access rights)
   - the most advanced environment for working with WordNets

c) **by means of the DEB API**
   - any external application may query the server and receive WordNet entries (in XML or other form) for subsequent processing
**GWG Spanish**

New search: `[Grid main page]`

**POS**: n ID: ENG20-05903215

**Synonyms**: palabra:1

Definition: Unidad de la lengua que los hablantes nativos pueden identificar: "las palabras son las unidades con las que se construyen las frases"; "apenas dijo diez palabras en toda la mañana"

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**GWG Czech**

New search: `[Grid main page]`

**POS**: n ID: ENG20-05903215

**Synonyms**: slovo:1

Definition: jazyková jednotka:1

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**GWG English**

New search: `[Grid main page]`

**POS**: n ID: ENG20-05903215

**Synonyms**: word:1

Definition: a unit of language that native speakers can identify

Usage: words are the blocks from which sentences are made

Usage: he hardly said ten words all morning

Domain: linguistics

SUMO/MILO: Word

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[hyponym] jazyková jednotka:1

[hyponym] slovní tvar:1

[hyponym] mero_part: syllable:1

[hyponym] form:1, word form:1, signifier:1, descriptor:1

[hyponym] nomenclatura:1, terminología:1
**GWG English**

New search: Grid main page

- [entity:1>object:1, physical]
  - [object:1>whole:2, whole thing:1, unit:6>artifact:1, artefact:1>fabric:1, cloth:1, material:4, textile:1]
  - [POS: n ID: ENG20-03676067-n BCS: 1]

Synonyms: net:6, network:3, mesh:4, meshing:2, meshwork:1

Definition: an open fabric of string or rope or wire woven together at regular intervals

Domain: industry

SUMO/MILO: Fabric

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**GWG Catalan**

New search: Grid main page

- [drap:1, roba:2, teixit:1, tela:1]
  - [POS: n ID: ENG20-03676067-n]

Synonyms: xarxa:5

Definition: --->

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**Sigma Knowledge Engineering Environment**

KB: SUMO

Language: English

**Fabric**

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**Appearance as argument number 1**

(Disjoint Fabric StationaryArtifact)

Merge AIF

12150.12150

Fabric is disjoint from stationary an

(Documentation Fabric EnglishLanguage "Artifacts"

that are created by weaving together natural or synthetic fibers or by treating the skins of certain sorts of Animals. Note that this Class includes

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**Acrylics, Acetate, Bedford cord, Brussels carpet, Brussels lace, Canvas, Cotton, Camel, Golden Fleece, Harris Tweed, Levant, Levant morocco, Mackinaw blanket, Orton, Persian lamb, Russia leather, Terylene, Turkish saddle, Ultrasuede, Valencian, Valenciennes lace, Velour, Viyella, abs, acetate, acetate resin, acrylic, adhesive bandage, afghan, alligator, alpaca, antelmacassar, armadillo, armadillo, bagging, baza, balbriggan, band, bandage, banding, banner, basket weave, bath linen, bath mat, bath towel, bath, batiste, beach towel, beadskin...**
Conclusions and Future Directions

- First version of DEBGrid already available with 5 WordNets
  http://deb.fi.muni.cz/debgrid
- High modularity and configurability
- Further development within the KYOTO project
- Waiting for other national WordNets to join 😊