Tourism and ICT Accessibility

Mobile Solution for Sign Language Accessibility for the Deaf and Hard of Hearing

EPP Hearing - 9/02/2012
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MSL Accessibility

• Mobile Sign Language Accessibility R&D project
• Co-funded by the EU (ERDF) and the Hungarian State
• Main objectives:
  – Create technologies and infrastructure to provide ICT accessibility solutions to the deaf and hard of hearing
  – Create a sustainable accessibility service by defining content creation and content ingestion workflows
  – Target areas: tourism, culture, administration
Stakeholders

Prelingual deaf are people who lost their hearing before they learnt to speak (or born that way). Because of their inability to connect written words to spoken ones, most of them will have a hard time reading text. Sign language is not only their primary way of communication, but also their native language and determining factor of cultural identity.
MSL Project Results

JEL-M Web Site

TEXT2SL engine

Service Infrastructure

JEL-M Mobile App

JELM Content Management

POI database

OOI database

Sign language video database

Stationary Resources
JEL-M Accessibility Framework

Public domain touristic content

JEL-M website for community touristic content

Institutions

Automatic/semi automatic translation of text content into sign language content

Sign language content production

POI database

OOI database

Sign language video database

Stationary Resources

Content management system for JEL-M mobile clients
JEL-M Mobile Application
### Employment
Tax year 6 April 2010 to 5 April 2011

<table>
<thead>
<tr>
<th>Information</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your name</td>
<td></td>
</tr>
<tr>
<td>Your UTR</td>
<td></td>
</tr>
</tbody>
</table>

#### Complete an Employment page for each employment or directorship

1. Pay from this employment + the total from your P45 or P60 + before tax was taken off
2. UK tax taken off pay in box 1
3. Tips and other payments not on your P60 + read page 11 of the notes
4. PAYE tax reference of your employer (on your P45/P60)
5. Your employer’s name
6. If you were a company director, put ‘X’ in the box
7. And, if the company was a close company, put ‘X’ in the box
8. If you are a part-time teacher in England or Wales and are on the Repayment of Teachers’ Loans Scheme for this employment, put ‘X’ in the box

#### Benefits from your employment * use your form P11D (or equivalent information)

<table>
<thead>
<tr>
<th>Benefit Description</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company cars and vans</td>
<td>The total cash equivalent amount</td>
</tr>
<tr>
<td>Fuel for company cars and vans</td>
<td>The total cash equivalent amount</td>
</tr>
<tr>
<td>Private medical and dental insurance</td>
<td>The total cash equivalent amount</td>
</tr>
<tr>
<td>Vouchers, credit cards and excess mileage allowance</td>
<td></td>
</tr>
<tr>
<td>Goods and other assets provided by your employer</td>
<td>The total value or amount</td>
</tr>
<tr>
<td>Accommodation provided by your employer</td>
<td>The total value or amount</td>
</tr>
<tr>
<td>Other benefits (including interest-free and low interest loans)</td>
<td>The total cash equivalent amount</td>
</tr>
<tr>
<td>Expenses payments received and balancing charges</td>
<td></td>
</tr>
</tbody>
</table>

#### Employment expenses

<table>
<thead>
<tr>
<th>Expense Description</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business travel and subsistence expenses</td>
<td></td>
</tr>
<tr>
<td>Professional fees and subscriptions</td>
<td></td>
</tr>
<tr>
<td>Fixed deductions for expenses</td>
<td></td>
</tr>
<tr>
<td>Other expenses and capital allowances</td>
<td></td>
</tr>
</tbody>
</table>

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*Shares schemes, employment lump sums, compensation, deductions and Seafarers’ Earnings Deduction are on the Additional Information pages enclosed in the tax return pack*
Content Lifecycle Management
Automatic text2SL translation

1. Summarization
   Summarized Text
2. Verification of Summarization
   Verified Summarized Text
3. Summarization Metrics and Model
4. SL Sentence Structure Rules
5. Translation Summarized text to ISL BSL ASL
6. Video Database Synonym Queries
7. Video Matching

Generic Corpus
Target Corpus for Summarization

Focus Group
Sign Language Video Database
6. Video Database Synonym Queries
Sign Language Video Segments
Sign Language Sentences

SL video
Sign Language Video Database

5. Translation Summarized text to ISL BSL ASL
4. SL Sentence Structure Rules
Main Innovations

• The program realizes accessibility solution as a cloud service. This means that basically no physical infrastructure needs to be built in the locations where the service is used.

• It provides unlimited scalability, since the service is provided on a device already used by the end user. The central infrastructure is designed to be highly scalable and easy to maintain. Scalability is unlimited both in terms of end user number and geographical coverage.

• Involvement of collective intelligence. Content is developed by the active participation of stakeholders. This also ensures that the content is relevant to stakeholders.
Future goals and objectives

• **Reach critical mass** of primary and secondary stakeholders (about 20% of potential stakeholders)
• **Increase geographical coverage** of the service.
• **Integration of further technologies** to enhance user experience
• **Develop a service for persons with visual impairment**
• **Develop the following service areas:**
  – Accessibility in tourism
  – Public transport
  – Museums, exhibitions, culture
  – Public institutions, customer service
  – Education, e-learning, m-learning
  – Entertainment, fun
  – Healthcare