



RoboBraille.org



Webinar:

RoboBraille and the RoboBraille Web API



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RoboBraille

- Self-service alternate media solution
- The history of the service
- RoboBraille
 - Produces MP3 audio files
 - Produces structured audio books
 - Produces e-books
 - Produces digital Braille books
 - Converts inaccessible and tricky docs into more accessible formats
- Supports multitude of languages

Why RoboBraille?

Independence and
self-sufficiency

Inclusion in education
and vocation

- Availability
- Privacy
- Multiple formats
- Cost and platforms
- Inclusion support and continued support
- Accessibility support in online education



RoboBraille Users

- Users with special needs
 - Blind, partially sighted, reading impaired, learning disorders, ...
- The Grey Area
- Mainstream users
 - Poor language skills, different learning styles, foreign language skills, ...
- Professionals
 - Alternate media professionals, rehabilitation staff, faculty, professionals, administrators

What's inside

Text-to-Speech

Text-to-Braille

E-book conversion

OCR

DAISY Pipeline

SaveAsDAISY

MS Office

Spam

Mail/Web access

Mail/Web delivery

MP3 encoding



Braille

MP3

Accessible docs

DAISY

Tagged PDF

Daisy Math

E-books

Braille artwork

English

Spanish

French

Portuguese

German

Greek

Italian

Dutch

Danish

Norwegian

Swedish

Icelandic

Finnish

Russian

Bulgarian

Romanian

Hungarian

Lithuanian

Slovenian

Polish

Inuit

Arabic

Cantonese

Mandarin

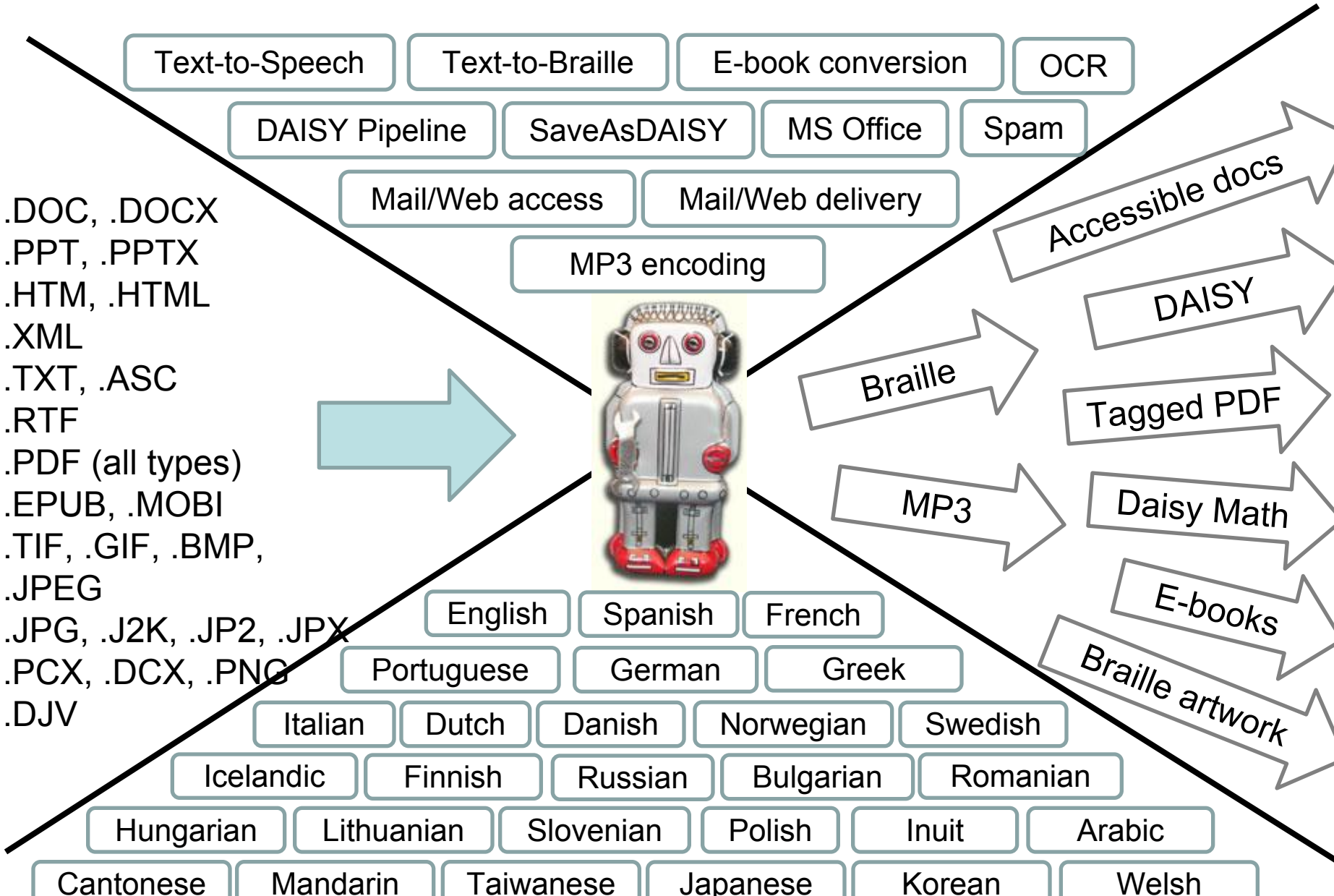
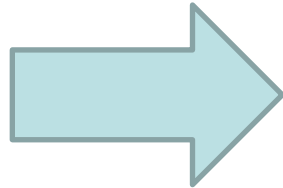
Taiwanese

Japanese

Korean

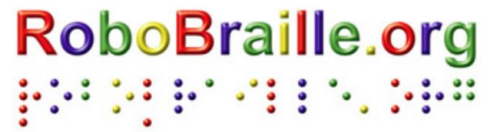
Welsh



.DOC, .DOCX
 .PPT, .PPTX
 .HTM, .HTML
 .XML
 .TXT, .ASC
 .RTF
 .PDF (all types)
 .EPUB, .MOBI
 .TIF, .GIF, .BMP,
 .JPEG
 .JPG, .J2K, .JP2, .JPX
 .PCX, .DCX, .PNG
 .DJV



RoboBraille interfaces

- End-users:
 - Email
 - Web
- Systems integration
 - Email
 - FTP
 - Web API



Follow us:  

Convert a File

Follow the four easy steps below to have your document converted into an alternative, accessible format. The result is delivered in your email inbox. You may upload one or more files, enter a URL to a file or simply type in the text you wish to have converted. The form expands as you make your selections.

Source

File

URL

Text

Step 1 - Upload your document

Select your file and upload it to the server (max 64 MB). Multiple files of the same type may be selected. Supported file types are .DOC, .DOCX, .PDF, .PPT, .PPTX, .TXT, .XML, .HTML, .HTM, .RTF, .EPUB, .MOBI, .TIFF, .TIF, .GIF, .JPG, .JPEG, .BMP, .PNG, .PCX, .DCX, .J2K, .JP2, .JPX, .DJV and .ASC

File name: ingen arkiver valgt

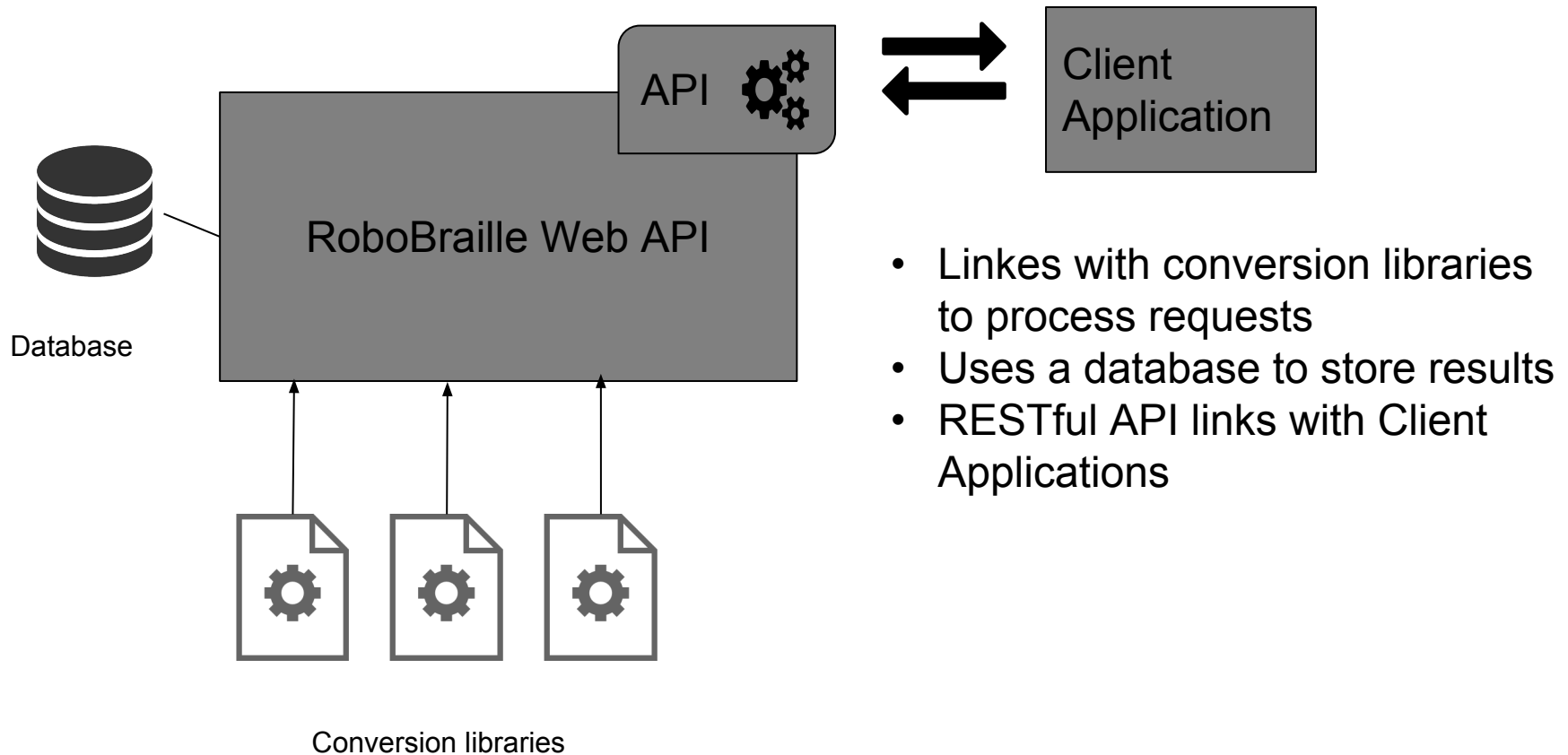
RoboBraille and P4All

- Create an open-source, component-based version of the RoboBraille framework
- Create a Web API interface to the RoboBraille service
- Create an implementation guide
- Create interfaces to other (emerging) technologies, e.g.,
 - Captioning services (for embedded video)
 - Language-to-language translation
 - Semantic structure recognition

Overview

- The RoboBrailleWebAPI is a server side solution for managing accessible document conversions. It has been developed and refined over the years to work with more diverse use cases.
- HTTP-based RESTful API
- Programmed in C#
- Is an ASP.NET Web API 2 project
- Uses a Microsoft SQL Server database
- It provides a framework for accessible document conversions, therefore it must be purposely tailored to fit your individual needs.

Overall System Architecture



RoboBraille Solution Architecture

- Requests encoded as Multipart/form-data (input parameters and file)
- Uses APIControllers to handle the request (BrailleController, AudioController)
- Requests get processed according to the conversion type
 - Example: Text to Braille, Image to Text, Text to Audio
- Stores each request as a Jobs (BrailleJob, AudioJob, DaisyJob)
- Requests can be chained to accomplish more complex conversions
 - Example: Image to Audio: Image to Text + Text to Audio
- Each job is processed in it's own Repository (BrailleJobRepository)
 - Repositories handle conversions or delegate the task to other dll's
 - Job results are stored in the database

Managing requests and responses

The client application steps:

1. Send a POST request with the source file and conversion parameters
2. Store the jobid and any other relevant parameters
3. Send GETjobStatus requests periodically to know when the job is finished (for large files processing can take longer)
4. When the job is Done send a GETjobResult request to retrieve the file.



Runner

Import



Builder

Team Library



SYNC OFF

Sign In



Filter

History

Collections

Nothing in your history yet. Requests that you send through Postman are automatically saved here.

Audio



No Environment



Audio

POST

http://2.109.50.18:5150/api/audio

Params

Send

Save

Authorization

Headers (1)

Body

Pre-request Script

Tests

Code

Type

Hawk Authentication

Clear

Update Request

Hawk Auth ID

d2b97532-e8c5-e411-8270-f0d6

Hawk Auth Key

7b76ae41-def3-e411-8030-0c8t

Algorithm

sha256

User

Nonce

f9hjag

Extra Data("ext")

App ID("app")

Delegation("dig")

Timestamp

1485536733

The authorization header will be generated and added as a custom header

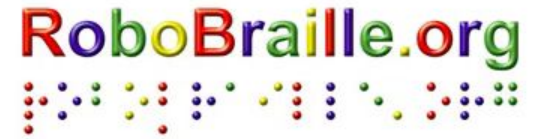
Save helper data to request

Installation

- Download source code from:
<https://github.com/sensusaps/RoboBraille.Web.API>
- Setup the Windows Server environment (database scripts, IIS, message queuing, Erlang, RabbitMQ, java runtime ...)
- Setup project bin directory + folder structure and update web.config to reflect those changes
- Use Visual Studio 2013-15 to open the project
- Setup project dependencies (dlls, batch processes, web services, message clustering, runnable applications ...)
- Build project and publish to any .NET server.

Other features

- Integration with Amara to retrieve subtitles from videos (based only on URL's from video streaming websites - YouTube, Vimeo)
- A Document Structure Recognition stub without the conversion library
- A Language To Language Translation stub that can integrate with RESTful APIs such as Google Translate API
- A demo client application at www.example.org/RoboBrailleSPA (not a complete implementation)
- Token based authentication using Hawk
- A demo user management page (not a complete implementation)



Convert to alternative media

Follow the steps below to have your document converted into an alternative, accessible format.

Select desired input



Upload File



Comments, questions

!?

Contact information

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Collaboration, institutional use, licensing

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