

OPIA TECHNICAL DOCUMENTATION

Customer	Publications Office
Contract reference	FC 10666
Subject	OPIA Technical documentation
Version	1.00
Release date	March 2022
Document reference	OPIA Technical documentation

Table of contents

Glossary of terms.....	4
1. Introduction.....	5
2. Description of technologies used	5
2.1. Language Understanding (LUIS)	5
2.2. Bot Framework Composer	5
2.3. Azure Bot service	6
2.4. App Service	6
2.5. Bot Framework Web Chat	6
2.6. Text Analytics	6
2.7. Speech Recognition	6
2.8. Text to Speech	7
2.9. Application Registration	7
2.10. Application Insights	7
2.11. Adaptive Cards	7
3. OPIA Architecture	8
3.1. Webchat Client	9
3.2. Static File Server	10
3.3. Token generation	10
3.4. Text Analytics Proxy	11
3.5. Search API	12
3. 6. Direct Line	13
3.7. Text Analytics	13
3.8. Application Registration	13
3.9. Speech Recognition	13
3.10. Text to Speech (TTS)	13
3.11. Bot	13
3.12. LUIS	14
3.13. Application Insights	14
4. OPIA Conversational Flow	15
4.1. LUIS Model	18
5. Confidentiality and Data Protection	20

5.1. Bot logs	20
5.2. LUIS dataset	20
5.3 Cookies	20
5.4 Speech recognition	20
6. Appendix.....	21
6.1 List of services and technologies	21
6.2. List of all Intents and trained Utterances	21
6.3 List of responses for the single turn response intents	35
6.4. Entity types and list	36
6.5. Entities by user story	36
6.6. Patterns	39
6.7. Report	41

Glossary of terms

Technical terms	Description
AI – Artificial Intelligence	Computer technology that allows machines to work in an intelligent way.
API – Application Programming Interface	A software intermediary that allows applications to retrieve information from one another.
Entity	Entities are important pieces of information that can be extracted from the user input that is relevant to the user's purpose. These pieces of information will be identified and stored to extract exactly what the user needs. An example of an entity can be the author of a specific article.
IDE - Integrated Development Environment	An integrated development environment (IDE) is software for building applications that combines common developer tools into a single graphical user interface.
Intent	Intent refers to the goal the customer has in mind when typing in a question or comment. An Intent represents an idea or a concept that can be contained within a message sent by the user, called an Utterance. An example of an intent is the fact that the user wants to search for a specific topic.
LUIS – Language Understanding	Cloud-based conversational AI service that applies custom machine-learning intelligence to a user's conversational, natural language text to predict overall meaning, and pull out relevant, detailed information
NLP – Natural Language Processing	Subfield of linguistics, computer science, and artificial intelligence concerned with the interactions between computers and human language.
RDDA – Reading Disability and Document Access	Project mandated by the European Parliament, which aims to develop and make available appropriate instruments to ensure that people with reading disabilities have equal access to the documents or publications and websites of EU institutions.
SDK- Software Development Kit	A software development kit (SDK) is a collection of software development tools in one installable package.

TTS - Text to Speech	Technology that enables text to be converted into speech sounds imitative of the human voice.
Utterance	Input from the user that can be any message typed or spoken in a conversation to the assistant. From this message the key Intents will be recognized.

1. Introduction

The Publications Office Intelligent Assistant (OPIA) is developed in line with the EU Parliament mandate of the “Reading Disability and Document Access” (RDDA) Pilot project. The intelligent assistant’s goal is to increase usability of the search portal.

The OPIA is available in both English and French and covers two main collections of the OP: EU Publications and EU law.

A complete technical description of the system will be provided in this document. This covers:

- The description of the technologies used
- The architectural overview
- The development and deployment overview
- The conversational flow
- All documentation regarding Intents, Entities and other training data used for the OPIA

2. Description of technologies used

As part of the vendor selection process, the top three different technologies have been evaluated based on benchmarking criteria that covered the solution profile, functional and non-functional requirements (see Deliverable A.2 Vendor selection). After weighting the selection criteria, Microsoft Azure has been chosen by the Publication Office to build the OP intelligent assistant.

Here is a list of the main Microsoft Azure technologies and services used by the OP intelligent assistant:

2.1. Language Understanding (LUIS)

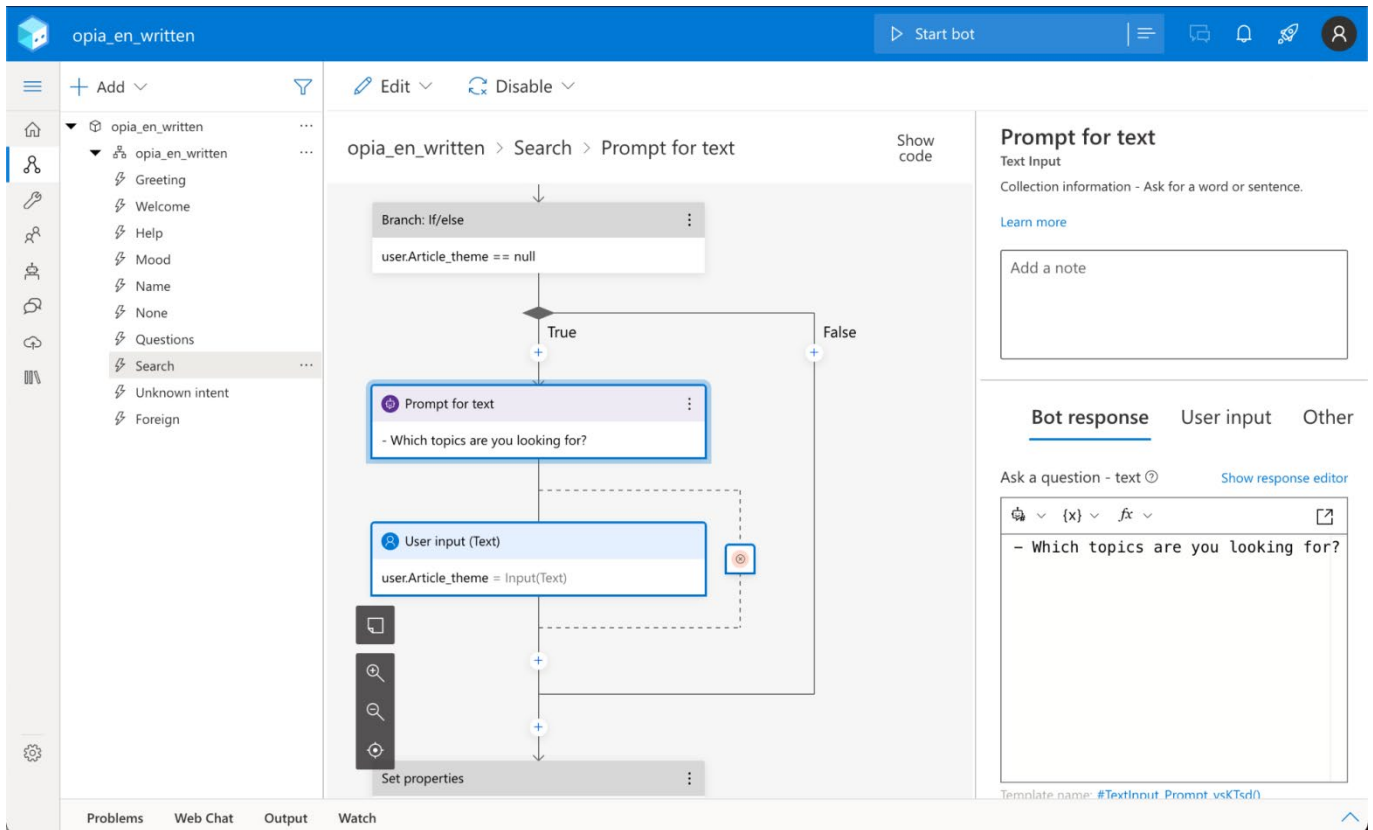
LUIS is a cloud-based conversational AI service that applies custom machine-learning intelligence to a user’s conversational, natural language text to predict overall meaning, and pull out relevant, detailed information.

LUIS is used by the OPIA to extract users’ intents and entities.

2.2. Bot Framework Composer

Bot Framework Composer, built on the Bot Framework SDK, is an open-source IDE for developers to author, test, provision, and manage conversational experiences.

It provides a powerful visual authoring canvas enabling dialogs, language-understanding models, QnAMaker knowledge bases, and language generation responses to be authored from within one canvas and crucially, enables these experiences to be extended with code for more complex tasks such as system integration. Resulting experiences can then be tested within Composer and provisioned into Azure along with any dependent resources.



OPIA uses the Bot Framework Composer for managing the conversational flow. The Bot Framework Composer integrates LUIS for intent recognition and entity extraction and uses the visual builder to define how the assistant will respond. The conversational flow also includes API calls, data processing and conditional logic.

The Bot Framework Composer generates a Bot application that is deployed to Azure Bot service.

2.3. Azure Bot service

Is the service running the Bot in Azure App Service. This service provides the communication channels used by the Bot.

The channels currently used by the Bot are Direct Line and Direct Line Speech. They allow text and speech communication with the Bot Framework Web Chat.

2.4. App Service

Azure App Service enables us to host the Bot without managing infrastructure. It offers auto-scaling and high availability.

2.5. Bot Framework Web Chat

The Bot Framework Web Chat component is a highly customizable web-based client for the Bot Framework SDK.

2.6. Text Analytics

A collection of features from Cognitive Service for Language that extract, classify, and understand text within documents.

OPIA uses Text Analytics to detect the language of the messages sent by the user.

2.7. Speech Recognition

This service is used to transcribe users' speech into text.

2.8. Text to Speech

This service is used to vocalize the bot's response. It transforms text into speech.

2.9. Application Registration

The Microsoft identity platform performs identity and access management (IAM) only for registered applications. Registering an application establishes a trust relationship between the application and the identity provider, the Microsoft identity platform.

The Application Registration is used by Direct Line as an IAM provider.

2.10. Application Insights

Application Insights is a feature of Azure Monitor that provides extensible application performance management (APM) and monitoring for live web apps. Developers and DevOps professionals can use Application Insights to:

- Automatically detect performance anomalies.
- Help diagnose issues by using powerful analytics tools.
- See what users actually do with apps.
- Help continuously improve app performance and usability.

2.11. Adaptive Cards

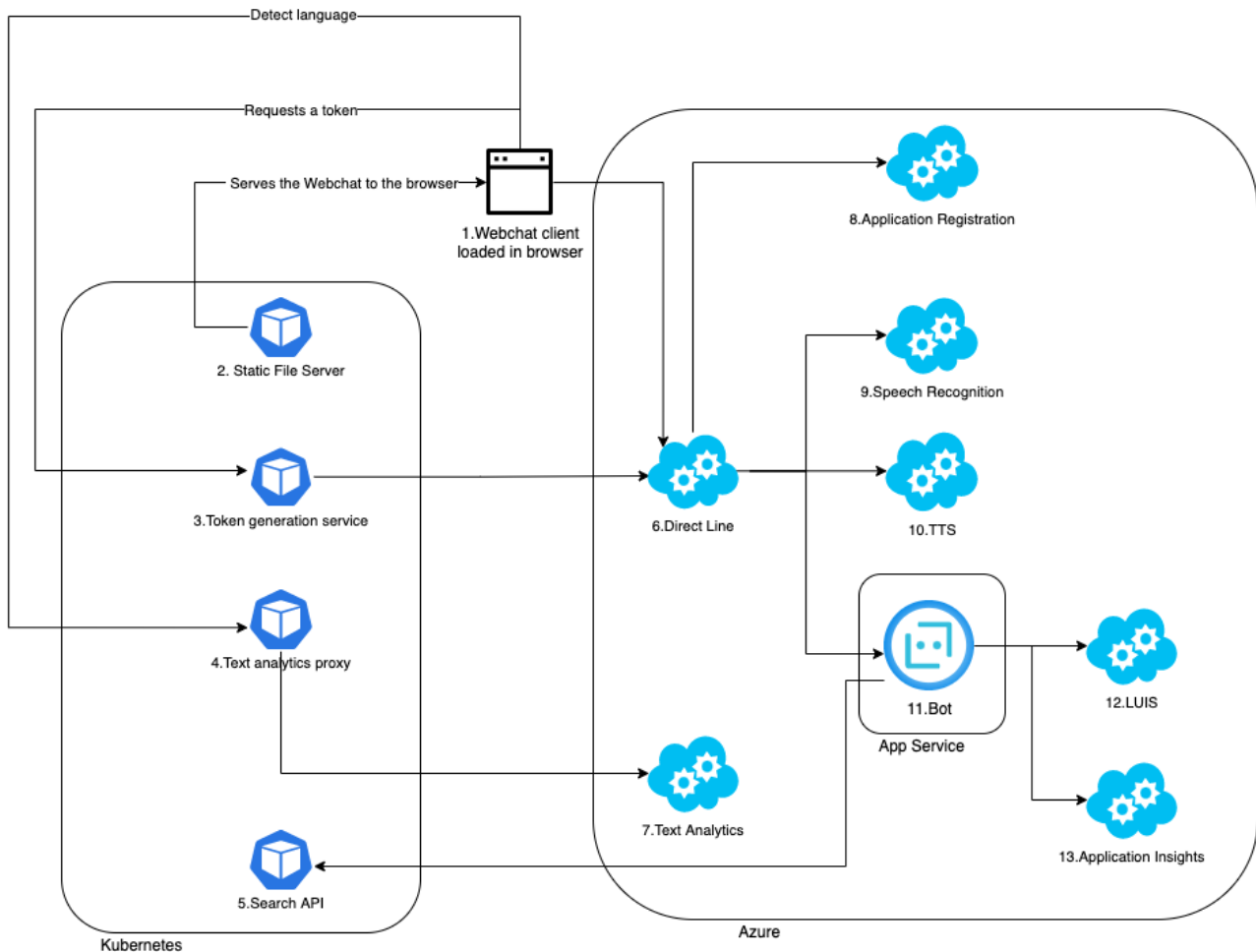
Adaptive Cards are a platform-agnostic method of sharing and displaying blocks of information without the complexity of customizing CSS or HTML to render them. Adaptive Cards are authored in JSON format, with integrations that cloud apps and services can openly exchange.

Adaptive cards is not part of Microsoft Azure but it is integrated with the Bot Framework technology stack.

OPIA uses Adaptive cards to display the search results.

3. OPIA Architecture

Here is an overview of the OPIA Architecture. We will describe how everything comes together and discuss each of the components in detail.



When users open the OP Portal their browser makes a request to load the Webchat client[1]. The Webchat client is hosted on the Static File Server[2].

After loading, the first thing the client does is to obtain an authentication token using the Token generation service[3]. In turn the Token generation service uses a secret master key to generate the authentication token by calling Direct Line[6]. The token is returned to the Webchat client[1] and is used to authenticate further requests. The token has an expiry period of 60 minutes, so just before the token expires the Webchat client will make a request to Direct Line to extend the token for an additional 60 minutes. Direct Line uses Application Registration[8] for identity management.

After obtaining the token the Webchat client[1] sends an event to the Bot[11] and the Bot replies with the welcome message. All communication between the Webchat client and the Bot passes through Direct Line[6] which authenticates the Webchat client.

When users send text messages in the Webchat client[1] the messages are sent to the Bot[11]. The Bot follows the conversational flow configuration in order to respond. Depending on the conversational flow, the Bot can use

LUIS[12] to extract the intents and entities before responding. In certain states the Bot will make a request to the Search API[5] to get the documents corresponding to the user search.

If the users send voice messages, the Webchat client[1] sends the audio stream to Direct Line[6] which passes it to the Speech Recognition service[9]. The Speech Recognition service detects when the user stopped talking, transcribes the speech to text and sends it to the Bot[11]. The Bot generates the response, following the conversation flow (The conversational flow is detailed in chapter 4), and using LUIS[12] if necessary. The response is then vocalized using the TTS service[10] and sent back to the Webchat client.

The Webchat client[1] contains a middleware that for every message sent by the user makes a request to the Text Analytics Proxy[4]. The Texts Analytics Proxy, using a secret master key forwards the requests to Text Analytics[7]. Text Analytics extracts the language of the message and returns it to the proxy, which returns it to the Webchat client middleware. If the detected language is different from the currently configured language, the Webchat will restart the conversation in the detected language.

Events within the Bot[11] are logged to Application Insights[13].

3.1. Webchat Client

The Webchat Client is based on the Bot Framework Web Chat component which provides the core functionality of the webchat while being highly customisable.

The Webchat Client is imported in the portal website script using a one line import of the loader script. The loader script creates all the necessary html elements and imports the additional resources. This limits the interaction between the Webchat and the Portal and allows Webchat updates to be published independently.

After setup the Webchat Client detects the browser language and connects to the appropriate Bot. As it will be explained further in this documentation at the moment there are actually 4 independent Bots acting as one and specialized for:

1. English written communication
2. English spoken communication
3. French written communication
4. French spoken communication

The Webchat Client starts by connecting to the written version of the bot corresponding to the browser language. If the browser language is not part of the supported languages it will default to English.

The Webchat Client contains a middleware component that was used to implement custom functionalities including:

1. Language detection - Each message sent by the user is sent to Text Analytics for language detection. If the detected language is different from the currently selected language, the Webchat will restart the conversation and connect to the bot corresponding to the detected language. A message is sent to the users letting them know that the language was changed.
2. Microphone click - If the users press the microphone button, the conversion will restart and the Webchat will connect to the spoken version.
3. CSS customization - Most high level customization regarding the general Webchat style can be implemented directly in the provided style.css template, but certain customisations require more specific targeting of elements within the chat history. Using the middleware we are able to insert certain css classes into specific elements allowing later css customization.
4. Message delay - This middleware adds delay between consecutive messages sent at the same time.
5. Voice opening - This middleware looks for certain trigger phrases to allow users to open documents by voice commands. e.g. "first document"

6. Thick boxes logic - This middleware updates the default behavior of adaptive cards related to multi select views. If the user selects the option “None” the middleware automatically deselects the other checkboxes.

3.2. Static File Server

An Nginx server is used to host the Webchat Client static files.

3.3. Token generation

Token generation is a Node JS application used to secure the Direct Line secret key.

Directline supports two authentication mechanisms

- A Direct Line secret is a master key that can be used to access any conversation that belongs to the associated bot. A secret can also be used to obtain a token. Secrets do not expire.
- A Direct Line token is a key that can be used to access a single conversation. A token expires but can be refreshed.

We implemented a token generation service to avoid exposing the secret key directly in the Webchat client.

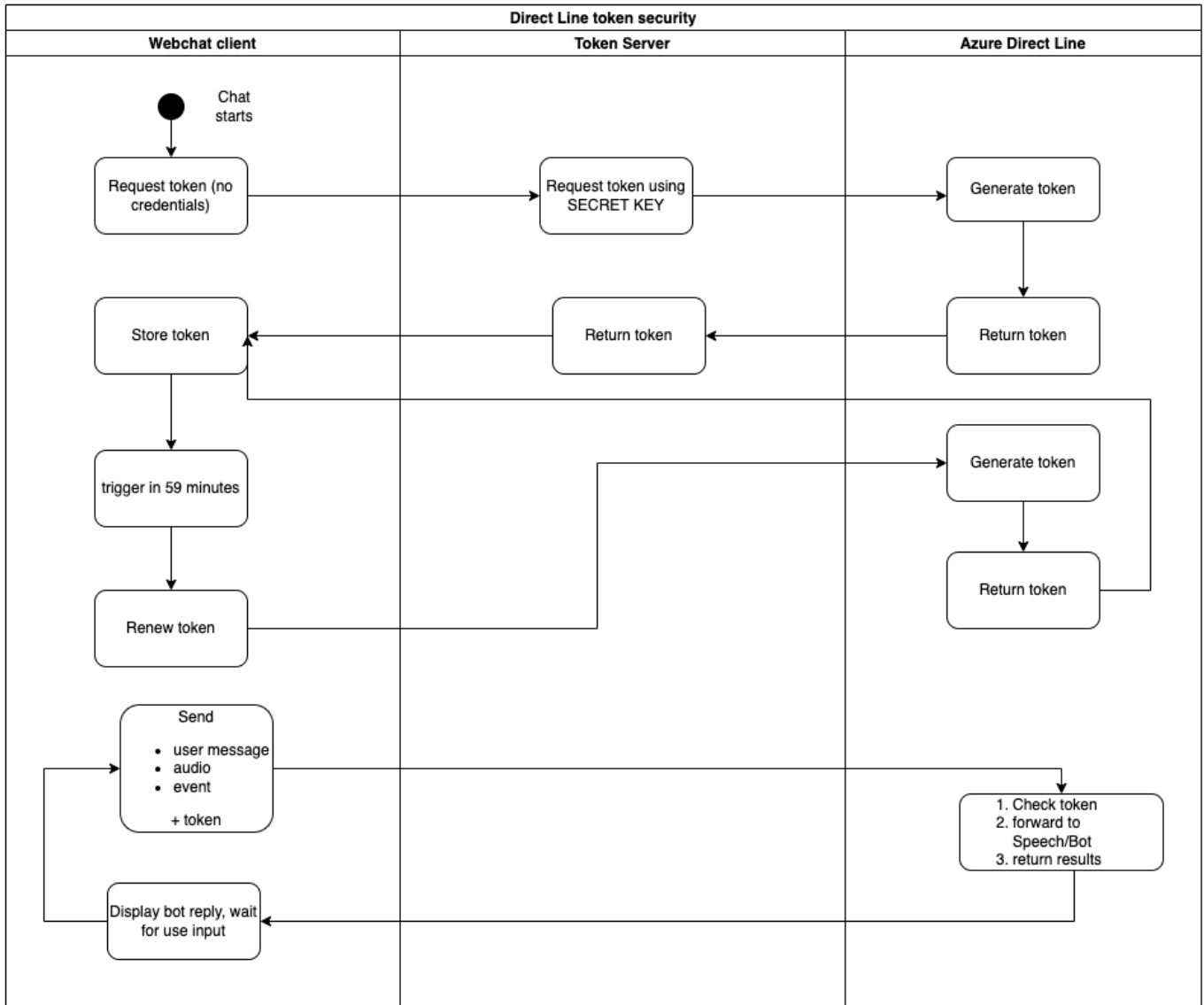
The token generation service is running as a Kubernetes pod and gets the secret key configurations as environment variables. Since there are actually 4 bots (english written, english spoken, french written, french spoken) there are also 4 Direct line keys for the speech channels 4 Direct line keys, one per bot.

In addition to the Direct Line key used to obtain the Direct Line token and establish the Direct Line channel, the speech bots also require a speech token. The process of generating the speech key is similar. A Speech key is passed in the Token server environment and used to obtain tokens. There is only one speech resource supporting both English and French.

To generate a token the Webchat client calls the Token generation service which in turn calls the Direct Line service using the secret key.

Token refreshes are done by the Webchat client by calling the Direct line service directly. No secret key is required for token refreshes.

The diagram below explains the token lifecycle.

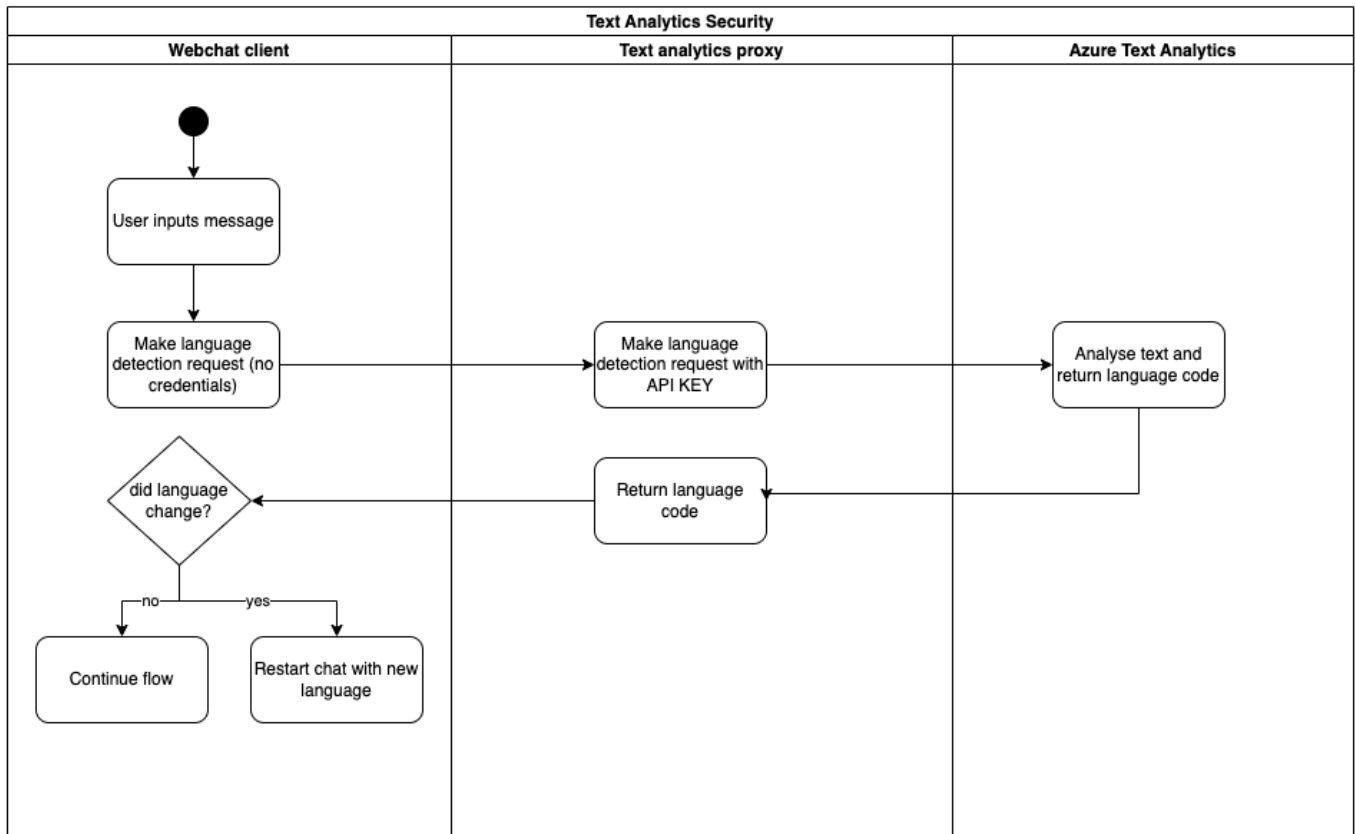


3.4. Text Analytics Proxy

Text Analytics Proxy is a Node JS application used to proxy requests between the Webchat client and the Text Analytics azure service.

Text Analytics authentication is done based on a secret key. Exposing the secret key directly in the Webchat client would represent a security vulnerability. To avoid exposing the key we are using a proxy server that receives the request from the Webchat client and forwards it to the Text Analytics service together with the secret key.

The diagram below explains the text analytics request lifecycle.



3.5. Search API

The Publication Office search API provides multiple methods to search and display relevant documents based on the user queries sent through the virtual assistant. The functioning of the virtual assistant relies on calling the right function with the right known Entities. There are multiple useful API functions, such as ‘browsing by subject’, which returns all documents matching a certain subject or ‘find similar’ which allows retrieving a list of similar documents based on the document identifier given as a parameter. For ‘simple’ search, the API filters for one metadata and for ‘advanced’ search for more. Other options such as language, subject and author are also included in the possibilities. The Bot uses the ‘advanced’ search method for querying documents matching the entities extracted from the conversation.

Each API request requires a basic authentication to identify the license responsible for the request. The process followed can be described in the following steps:

1. The API call with the user’s input starts with the HTTP POST request to the Publication Office Search API
2. The response is received in JSON format - which is automatically parsed by the Bot Framework to extract the response metadata
3. This metadata received from the Publication Office Search API is stored in different variables, including the number of documents filtered, the authors, documents titles, subjects, period etc. These variables are used to provide the final results to the user.
4. The process repeats for each response from the user that is detected by the OPIA Intelligent Assistant as a relevant entity to make a post request to the Publication Office Search API
5. At the end of the conversation with the user, the virtual assistant will display the two most relevant documents and give a quick overview of the search results to the user. The user can select “find more” to retrieve additional relevant documents based on the query given as a parameter. It is possible to prune user’s search by storing new entities and calling additional API requests.

3.6. Direct Line

The Bot Framework offers multiple communication channels with the Direct Line branding. Two channels are used within the OPIA:

- **Direct Line (standard)** is a standard channel over HTTPS protocol to allow communication between a client application and a bot.
- **Direct Line Speech** provides Text to Speech and speech to text services within the channel. It allows a client to stream audio directly to the channel which will then be converted to text and sent to the bot. The Direct Line Speech is also able to convert text messages from the bot into audio messages as spoken by a variety of A.I. powered voices. Combined, this makes Direct Line Speech capable of having audio only conversations with clients.

As mentioned in the Token generation section the Direct Line handles user authentication. It allows authentication based on the secret master key or a limited scope token. The best practice is to use the Direct Line API to exchange the key for a token. The client application then will use the token to authenticate its requests within the scope of a single conversation.

3.7. Text Analytics

The Text Analytics is called from the Webchat middleware to detect the language of the messages sent by the user. Requests are proxied through the Text Analytics proxy in order to avoid exposing the secret key in the Webchat client.

3.8. Application Registration

The Application Registration is used by Direct Line as an identity and access management provider. There are 4 Application Registration resources, one per bot version.

3.9. Speech Recognition

The Speech Recognition service is used to transcribe users' speech into text. The same Speech resource is used for both English and French. The service is used through the Direct Line Speech channel.

3.10. Text to Speech (TTS)

The TTS service is used to vocalize the bot responses. The service is provided and billed within the Azure Speech resource. The same Speech resource is used for both English and French. The service is used through the Direct Line Speech channel.

3.11. Bot

The Bot is the central component of the OPIA. The Webchat client communicates with the Bot through Direct Line. The conversations starts with the Webchat sending a start event and the Bot responding with a Welcome message. After the initial exchange the conversation continues with message exchanges initiated by the Webchat client.

When the Bot receives a message first it analyses it. Some messages, such as responses with predefined options, are interpreted directly by the Bot. If the received message requires more complex interpretation the Bot makes a LUIS call to extract the intent and entities. The intent and entities are stored in the session. After the interpretation of the message the Bot follows the conversational flow to generate a response. In doing so the Bot can make API Requests to external services such as the Search API.

The Bot Framework Composer IDE is used for the Bot development. The Composer is used to generate the Bot application and deploy it to the App Service.

It is important to note that the OPIA actually encapsulates 4 independent Bots specialized for:

1. English written communication

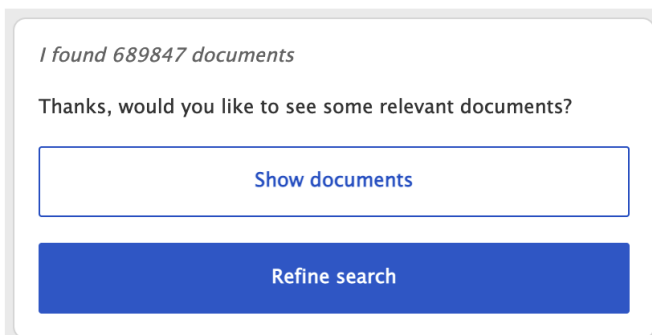
2. English spoken communication
3. French written communication
4. French spoken communication

The 4 bots are very similar to one another. The English written bot is the original version that was cloned to create the others. The French written version is a clone of the English written version where all the texts have been translated from English to French. Similarly, the French spoken version is a clone of the English spoken version where all the texts have been translated from English to French. The translated texts include bot responses, training phrases, entity values and recognition patterns.

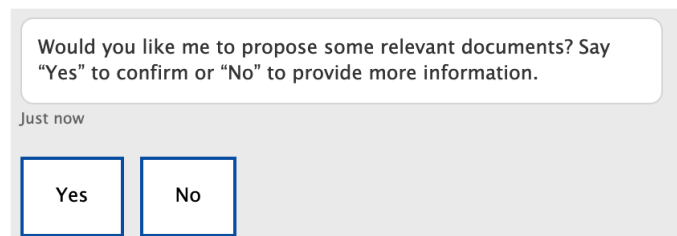
The English spoken version is a clone of the English written version where the Bot responses have been adapted to be more descriptive and two allow more simple responses from the user. In some cases this also required breaking an interaction in multiple steps.

An example of an adaptation made to the spoken version is the search results interaction. In the written version after the user initiates a search, the bot responds with a card that presents the number of results and allows the user to choose between two options: “Show documents” and “Refine search”. The user can either type the option text or just click the button on the card.

In the spoken version the card was removed, since we assume that buttons can not be clicked in the spoken flow. Furthermore the response has been adapted to request a “yes” or “no” answer. The “yes” corresponds to the “show documents” flow and “no” corresponds to the “Refine search” flow.



English written version



English spoken version

The Webchat client middleware contains logic allowing it to switch between the 4 bots in certain situations. This gives the user the impression that he is interacting with a single Bot.

3.12. LUIS

The LUIS machine learning model is a cloud-based conversational AI service that applies custom machine learning intelligence to a user's text or speech input. This is used to predict the overall meaning and extract relevant information that the assistant uses to query the portal.

The OPIA uses two LUIS models, one for English and one for French. The written and the spoken bots share the same LUIS models.

3.13. Application Insights

Certain events and performance metrics within the Bot are logged to Application Insights. The events include:

- messages sent by the bot
- messages received by the bot
- luis calls

For each event the following information is being logged:

- timestamp
- event name
- user id
- name of the bot

Based on those events, using the Kusto Query Language, we can generate a variety of reports including:

- the number of users (*users refers to chat sessions not unique users as we are not using cookies)
- the number of messages sent by users
- number of messages per conversation
- the spread between the 4 bots

Sample reports are provided in the Appendix.

The performance metrics include:

- response time
- number of failed requests
- other infrastructure related metrics (cpu, memory, io rate)

4. OPIA Conversational Flow

The conversational flow is managed by the Bot component, relying on LUIS for intent recognition and entity extraction.

Once an Intent is recognized, the bot will enter a specific flow to converse to the user. For example if the “Greeting” Intent is recognised with the query “Hi”, the assistant might reply with “How can I help you today” for example. If the “Search” Intent is recognized, the virtual assistant will guide the user in researching a relevant document. However, like every machine learning algorithm, the Intents and Entities detection will perform based on training and a great deal of attention should be added to the phrases used and the conversational flow set. The algorithm also interacts with the document metadata on the portal making it dependent on completed and correct metadata.

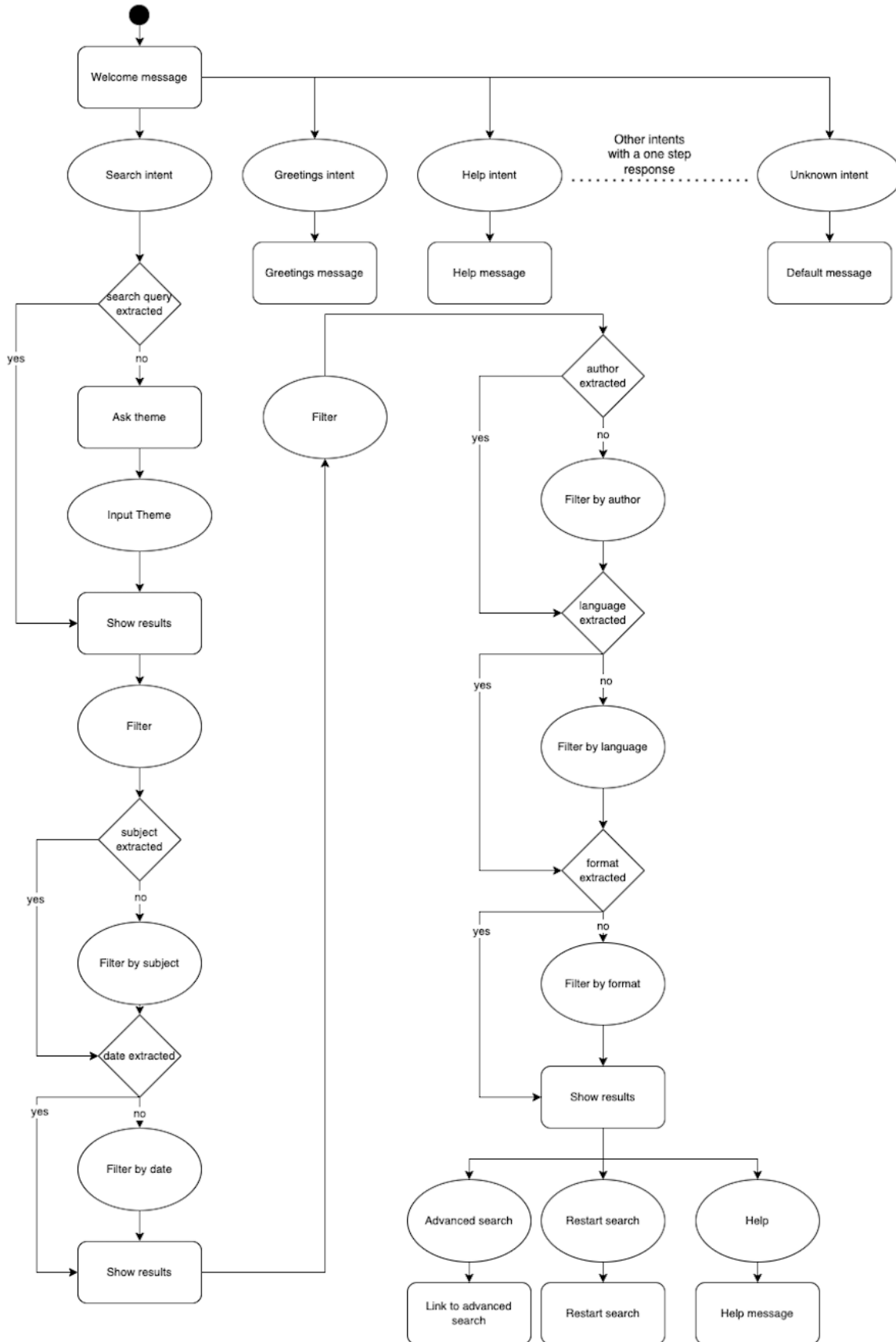
Here is a non-exhaustive list of the Intents as well as some examples. The full list is available in the appendix.

Intent	Description	English	French
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Foreign	The Intent picks up different languages when someone is starting a conversation with the bot	Asalaam alaikum Ciao Cześć	¿Qué tal? Asalaam alaikum Ciao
Greetings	When the user greets the bot the user receives a greeting back from it	Good afternoon Good morning Hi there	Bienvenue Bjr Bonjour
Help	This Intent aims to provide assistance to the user while asking for additional help using the search assistant	Can I get help? Can you assist me? Can you give me a hand?	J'ai besoin de ton aide J'ai besoin de ton soutien Je me demande si tu peux m' aider
Mood	The bot can interact with the user when asked how she/he is feeling	Are you fine? Are you ok? Are you well	Comment ça va ? Tu vas bien ? Comment tu te sens ?
Name	When the user asks for the bot's name, she/he receives an answer from it	Do you have a name? How can I call you? How do people call you?	C'est quoi ton nom ? C'est quoi ton prénom ? Comment devrais je t'appeler ?
Questions	This Intent picks up if the user asks general questions	Do you have a family? Do you like movies?	Quel est le temps ? Quel jour sommes-nous ?
Search	These are the main search Intents and provide numerous ways how the user can search a specific document	Search Search an article about right of citizen Search for a doc with info about renewable Technologies	Cherche-moi un document qui met en avant l'inégalité des sexes Cherche moi un document qui met en avant protection de l'environnement

The search intent triggers the search flow representing the main part of the Bot. The other intents listed above are configured to return a single response. The responses for those intents are detailed in the Appendix section

Here is a schematic overview of the OPIA Conversational flow.



When the user sends a query to the virtual assistant, if an Entity such as the theme or the publication date of the article is detected with LUIS recognizer, it is stored as a value and the document search will be filtered with these values.

The Bot uses the extracted entities to query the search API. The results are displayed to the user. After the initial results are displayed the Bot allows the user to further filter the results by providing additional entities.

To train the model to recognize specific entities, their potential locations were defined in multiple queries using patterns to cover multiple forms for the same expression. The virtual assistant also uses advanced features like the adaptive expressions and conditional responses to adjust its answers to the user’s entries.

The following table shows a non-exhaustive list of Entities and value examples. The full list is available in the Appendix.

Entities	Examples in English	Examples in French
Article author	· European University Institute · European Data Protection Supervisor	· Direction générale de la mobilité et des transports · Commission européenne
Article language	· French · English	· Français · Anglais
Article theme	· Data privacy regulations · Energy efficiency	· Réglementations environnementales · Collection de données
Article type	· Html · Pdf	· Html · Pdf
Article year	· 1970 · 2013	· 1970 · 2013

4.1. LUIS Model

The cognitive LUIS model is based on NLP. The assistant’s goal is to predict unseen Intents and Entities in discussions based on what it learned during its training. Two LUIS models are used by the OPIA, one for English and one for French.

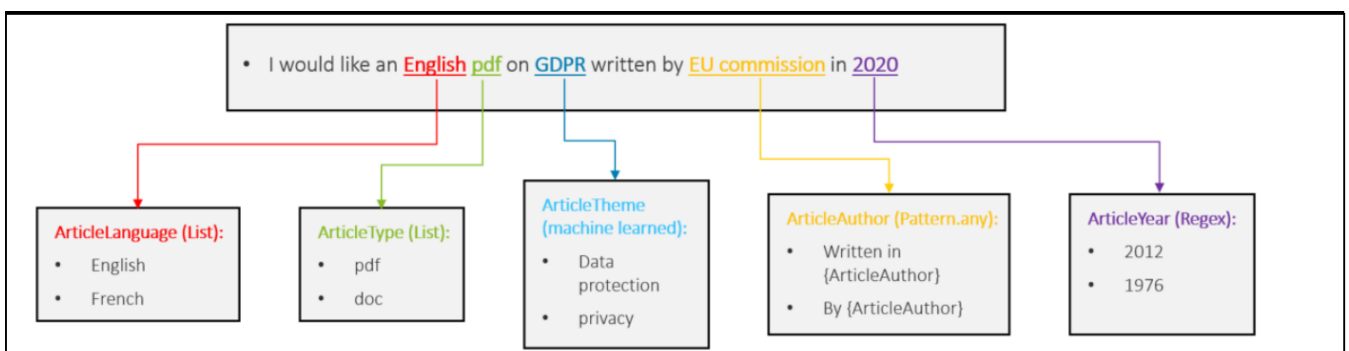
There are different ways to train different Entity types in LUIS. The following four types are relevant

Entity type	Description
Pattern	This is a variable-length placeholder used only in a pattern's template Utterance to mark where the Entity begins and ends. For Entities, where full lists cannot be defined, patterns such as the possible location of an Entity in a sentence can help the Smart assistant detect them. This is applied in the OPIA Intelligent Assistant to detect Authors.

Machine learned Entities	All Entities defined are detected automatically in training Utterances. By defining many possible values, gathered by users' stories theme, and by training the model to detect them with many Utterances, the LUIS model will be able to detect Entities that it has never seen before. It suits the theme Entity which is not a finite list and allows grammatical errors.
Regex	Regular expression which detects a specific combination of numbers. It is specifically useful to detect the year in any sentence.
List	Possible values for a given Entity, it requires to match exactly one of the predefined Entities examples in the list or one of its synonyms also predefined in the list. These Entities are easily predictable and don't require machine learning to be detected. For instance, it suits perfectly for document type where there is a known list of possible document types on OP Portal.

The machine-learned Entities type requires examples of Intents and Entities to be able to learn and generalize on new user input, as it will never be possible to provide a list of every possible query the user will search. Additionally, this will also account for misspelling, grammatical errors or a different tone used by different users. The machine learned Entities will allow the virtual assistant to detect something more meaningful than a simple list of possible values. To train the model many possible user utterances should be provided that contain relevant Entity values. By providing these examples, the ML model applies NLP and can learn to generalize on new user Utterances.

Example: One of the training Utterances is: "please help me to find a document about {@ArticleTheme=freedom of speech}". The OPIA Intelligent Assistant learns from many examples and different sentence formulations in order to be able to detect different theme Entities in future Utterances from real users. Let's say the user uses the trained search assistant and writes "I would like a document on climate change". The OPIA Intelligent Assistant would be able to detect {@ArticleTheme= climate change}.



Applying NLP and ML techniques, the OPIA Intelligent Assistant is able to recognize relevant Entity values that don't exactly match the example lists. This means that many misspelling and grammatical errors could also be supported to a certain extent. Additionally, patterns can be defined to assist the learning process. For instance a pattern can be "look for", "search for" and "try to find". This could be viewed as providing the model with synonyms that allows it to detect the right Intent and avoids defining each Utterance separately. The ML model detection will never be perfect and the flow, options and training patterns of the virtual assistant should be carefully designed. One key feature of a well-trained ML model is that it can easily be expanded to include a new scope to match future requirements.

When a given input matches multiple dialog nodes, the intelligent assistant shares a list of the most relevant options and asks the end-user to select. The user is also able to click to see more options, filter and refine current search or continue to the advanced search on the OP portal. The assistant can also redirect the user to contact the help desk. In the case where the user Utterance is not understood, the virtual assistant will redirect the user or ask the end-users to clarify their meaning. The following search guidance options are included functions:

- Prompt questions to direct user's search and allow filtering
- Include interactive tick boxes and buttons for selection
- Use additional metadata to prune the search
- Have speech-to-text functionality

Three predefined user stories form the basis of the LUIS training dataset for both English and French:

1. **GDPR:** As a student with dyslexia, I am using the OP Portal to do research for a project on the recent GDPR privacy regulation in the EU.
2. **Consumer rights:** A visually impaired individual wants to use the voice function of the OP Portal to get some information about his consumer rights as a permanent resident in the UE
3. **Climate change:** A non-tech-savvy activist having specific interest in the topic of climate change wants to use the OP Portal to find out more about the EU's environmental policy.

5. Confidentiality and Data Protection

Here we present a list of data handled by the OPIA.

5.1. Bot logs

Bot logs are stored into Application Insights and used to generate aggregate reports.

The logs are associated with a conversation id and include various events generated by the Bot, including messages sent, messages received and LUIS calls. The logs metadata doesn't include user messages or other user identifiers. Information about the user agent(IP, browser, OS) is not collected.

5.2. LUIS dataset

User utterances are logged by LUIS to help improve the performance of the models. Utterances logged into LUIS are not associated with any conversation identifier or user identifier.

Logged utterances are manually annotated to improve the performance of the models.

5.3 Cookies

The OPIA doesn't use cookies.

5.4 Speech recognition

Speech-to-Text audio input is processed only on the Azure's server memory, and no data is stored at rest. All data in-transit is encrypted for protection.

Please read more here: <https://docs.microsoft.com/en-us/legal/cognitive-services/speech-service/speech-to-text/data-privacy-security>

6. Appendix

6.1 List of services and technologies

Here is a list of services and technologies used in the OPIA and their versions.

Service/ technology	Version
Adaptive Cards	1.2
App service	NA
App service plan	NA
Azure Bot	NA
Application Insights	NA
Application Registration	NA
Bot Framework Composer	2.1.1
Bot Framework SDK	4.12.0
Bot Framework Webchat	4.15.1
LUIS	1.0
Speech Recognition (Speech)	NA
Text Analytics (Language)	NA
Text to speech (Speech)	NA

6.2. List of all Intents and trained Utterances

English	French
Foreign	

<ul style="list-style-type: none"> · ciao · cześć · dzień dobry · god dag · goddag · goedendag · guten tag · hallo · halløj · hej · hoi · hola · konnichiwa · merhaba · oi · olá · privet · salve · selam · shalom · tjena · witaj · yassas · yassou · zdravstvuyte · asalaam alaikum 	<ul style="list-style-type: none"> · asalaam alaikum · ciao · cześć · dzień dobry · god dag · goddag · goedendag · guten tag · hallo · halløj · hej · hoi · hola · konnichiwa · merhaba · oi · olá · privet · salve · selam · shalom · tjena · witaj · yassas · yassou · zdravstvuyte · ¿qué tal?
Greetings	
<ul style="list-style-type: none"> · good afternoon · good morning · good night · halo · hello · hey · hey there · hi op bot · hi there · it's a pleasure meeting you 	<ul style="list-style-type: none"> · bienvenue · bjr · bonjour · bonjour à toi · bonne journée · bonsoir · commence · coucou · début · enchanté

<ul style="list-style-type: none"> · it's an honour · morning · my pleasure · nice to meet you · night · now · start · today · what's up · what's up · yo · afternoon · begin · evening 	<ul style="list-style-type: none"> · hello · hey · hi · quel honneur de te rencontrer · quel honneur de vous rencontrer · salut · salut toi · slt · yo
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Help	
<ul style="list-style-type: none"> · can I ask you for a favour · can I get assistance · can I get help · can you assist me · can you give me a hand · can you help me · can you help me with something · can you please assist me · can you please do something for me · can you please help · can you provide some help · could I bother you · could you assist me · could you help me out · do you know how to · do you think you can help · help · help me please · how am I suppose to search a document with op assistant · I am asking for help · I need help · I need you 	<ul style="list-style-type: none"> · ca te derangerait de m'aider un peu · j'ai besoin d'aide · j'ai besoin de ton aide · j'ai besoin de ton soutien · je me demande si tu peux m'aider · je peux te déranger stp · peux tu etre dérangé · peux tu m'accorder de ton temps · peux tu m'assister · peux tu me rendre un service · peux-tu m'aider · peux-tu m'apporter de l'aide · pourrais je avoir ton aide · s'il te plait aide moi · soutiens moi · stp aide moi · svp aidez moi · tu dois me venir en aide · tu penses pouvoir m'aider · tu peux m'accorder un peu de ton temps · tu peux m'aider · tu peux me venir au secours

<ul style="list-style-type: none">· I wonder if you can help· is it possible to assist me· lend me a hand please· please help· what are you supposed to do· what do you do· what is this bot for· what is your purpose· would you mind assisting me· would you mind to help· would you offer some help· can I ask you a favour	<ul style="list-style-type: none">· tu peux me venir en aide· tu peux m'offrir ton aide· tu sais comment m'aider· viens m'aider· apporte moi de l'aide
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Mood

<ul style="list-style-type: none"> · are you ok · are you well · do you feel good · do you feel great · how are you · how are you doing · how are you feeling · how do you do · how do you feel · how is it going · how is life · how's your day · what is going on · what is your mood · what's going on · what's new · you alright · you ok · are you fine 	<ul style="list-style-type: none"> · ca va bien · comment ca se passe · comment ca va · comment se passe ta journée · comment tu te sens · comment va la vie · comment vas tu · quoi de neuf · quoi de nouveau · tout est bon · tout est ok · tout marche comme sur des roulettes · tout roule · tout se passe bien · tout va bien · tu te sens bien · tu vas bien · ca va
Name	
<ul style="list-style-type: none"> · can you repeat your name · do you have a name · how can I call you · how do people call you · how do we call you · how do we name you · how may I adress you · how should I call you · may I ask your name · may I have your name · present yourself · say your name · tell me your name · what are you named · what do you call yourself · what is your name · what's your name · who are you 	<ul style="list-style-type: none"> · c'est quoi ton prénom · comment devrais-je t'appeler · comment tu t'appelles · comment tu te prenombres · comment veux-tu que je te prénomme · dis moi ton nom · dis moi ton prénom · je peux t'appeler comment · on te surnomme comment · presente toi · t'es qui · tu as un nom · tu as un prénom · tu as un surnom · tu es qui · tu peux me rappeler ton nom · tu t'appelles comment · c'est quoi ton nom

<ul style="list-style-type: none"> · would you mind saying your name · are doing well 	
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Search	
<ul style="list-style-type: none"> · {@ArticleTheme=agricultural} · {@ArticleTheme=agriculture} · {@ArticleTheme=agronomy} · {@ArticleTheme=ai} · any info related to {@ArticleTheme=data collection} · {@ArticleTheme=biodiversity} · {@ArticleTheme=biology} · blockchain · can I have en document · can I have English document · can I have fr document · can I have French document · can I have some help to find a report on {@ArticleTheme=data privacy regulations} · can I have some help to find a report on {@ArticleTheme=women's rights} · can I receive a document discussing the topic of {@ArticleTheme=single market in Europe} · can I receive an article about {@ArticleTheme=environmental taxes} · can I receive an article talking about {@ArticleTheme=environmental policies} · can you bring some help by searching for a document about {@ArticleTheme=energy efficiency} · can you find a doc about {@ArticleTheme=data privacy} · can you find a doc about {@ArticleTheme=immigration} · can you find a doc about {@ArticleTheme=sustainability} · can you give me a document providing any information on {@ArticleTheme=economic social cultural rights} · can you help me finding any information about {@ArticleTheme=consumer protection in e commerce} · can you help me finding some reports talking about {@ArticleTheme=information security} · can you help me looking for an article discussing about {@ArticleTheme=brexit} · can you help me searching for an article about {@ArticleTheme=sustainability transition} 	<ul style="list-style-type: none"> · {@ArticleTheme=ai} · {@ArticleTheme=artificial intelligence} · {@ArticleTheme=biology} · {@ArticleTheme=biosphère} · {@ArticleTheme=blockchain} · {@ArticleTheme=bouleversement météorologique} · {@ArticleTheme=changement climatique} · {@ArticleTheme=changement de climat} · cherche-moi un document qui met en avant {@ArticleTheme=l'inégalités des sexes} · cherche-moi un document qui met en avant {@ArticleTheme=protection de l'environnement} · cherche-moi un dossier en relation avec {@ArticleTheme=protection de l'environnement} · cherche-moi un dossier qui discute de {@ArticleTheme=règlementations environnementales} · cherche-moi un journal au sujet de {@ArticleTheme=collection de données} · cherche-moi un journal qui discute de des {@ArticleTheme=disparités dans la société} · cherche-moi un rapport discutant de {@ArticleTheme=information confidentielle} · cherche-moi une information qui discute de des {@ArticleTheme=disparités dans la société} · cherche-moi une information qui discute de {@ArticleTheme=données confidentiels} · cherche-moi une information qui discute de {@ArticleTheme=fonte des glaces} · cherche-moi une information qui discute de {@ArticleTheme=l'égalité des genres} · cherche-moi une revue mettant en avant {@ArticleTheme=collection de données}

<ul style="list-style-type: none"> · can you look for a document about {@ArticleTheme=foreign policy} · can you look for an article talking about {@ArticleTheme=open data portal} · can you look for any file in the search portal about {@ArticleTheme=data collection} · can you provide me a document with information about {@ArticleTheme=equality of rights in eu} · can you provide me a document with information about {@ArticleTheme=the impact of ai on data privacy} · can you provide me information about {@ArticleTheme=environmental tax} · can you provide me information about {@ArticleTheme=impact of blockchain} · can you provide me information about {@ArticleTheme=woman's right} · can you search for articles related to {@ArticleTheme=open data} · can you search for docs having info on {@ArticleTheme=European wealth data} · can you send me a doc about {@ArticleTheme=freedom of movement} · can you send me a doc about {@ArticleTheme=personal data protection} · can you send me a doc in en about {@ArticleTheme=environmental regulations in eu} · can you try to find an article with information on {@ArticleTheme=offshore installations} · {@ArticleTheme=citizen rights in eu} · {@ArticleTheme=citizenship} · {@ArticleTheme=civil liberties} · {@ArticleTheme=civil rights} · {@ArticleTheme=climate change} · {@ArticleTheme=climate change policies} · {@ArticleTheme=climate change policy} · {@ArticleTheme=climate environment} · {@ArticleTheme=climate smart agriculture} · {@ArticleTheme=cloud computing} · {@ArticleTheme=computer security} · {@ArticleTheme=constitution} · {@ArticleTheme=constitutional rights} · {@ArticleTheme=consumer law} · {@ArticleTheme=consumer protection} 	<ul style="list-style-type: none"> · cherche-moi une revue qui discute de le {@ArticleTheme=droit d'expression} · {@ArticleTheme=climat} · {@ArticleTheme=collection de données} · {@ArticleTheme=combat contre le réchauffement climatique} · {@ArticleTheme=déforestation} · Des {@ArticleTheme=disparités dans la société} · {@ArticleTheme=données} · {@ArticleTheme=données confidentielles} · {@ArticleTheme=données privées} · {@ArticleTheme=écologie} · {@ArticleTheme=écologie} · {@ArticleTheme=effet de serre} · {@ArticleTheme=Energie renouvelables} · {@ArticleTheme=Energie verte} · {@ArticleTheme=environnement} · essaie de trouver un article qui discute de des {@ArticleTheme=disparités dans la société} · Essaie de trouver un article qui discute d'énergie renouvelable · Essaie de trouver un document en relation avec {@ArticleTheme=impact des déchets} · Essaie de trouver un document en relation avec la {@ArticleTheme=loi sociale} · Essaie de trouver un document en relation avec {@ArticleTheme=l'inégalités des sexes} · Essaie de trouver un dossier en relation avec {@ArticleTheme=l'inégalité sociale} · Essaie de trouver un journal parlant de {@ArticleTheme=données confidentielles} · Essaie de trouver une information à propos de {@ArticleTheme=données privés} · Essaie de trouver une information discutant de {@ArticleTheme=énergie renouvelable} · Essaie de trouver une information en relation avec {@ArticleTheme=protection de l'environnement} · Essaie de trouver une revue qui parle de {@ArticleTheme=données} · Essaye de chercher un article discutant de des {@ArticleTheme=disparités dans la société} · Essaye de chercher un article discutant de {@ArticleTheme=gaspillages} · Essaye de chercher un article discutant de le {@ArticleTheme=droit du consommateur}
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<ul style="list-style-type: none"> · {@ArticleTheme=foreign policy} · {@ArticleTheme=free speech} · {@ArticleTheme=freedom of citizens} · {@ArticleTheme=freedom of religion} · {@ArticleTheme=freedom of speech} · {@ArticleTheme=freedoms} · {@ArticleTheme=gdpr} · {@ArticleTheme=global warming} · {@ArticleTheme=green economy} · {@ArticleTheme=green energy} · {@ArticleTheme=greenhouse gas} · {@ArticleTheme=health care} · {@ArticleTheme=health inequalities in Europe} · hello, may I ask you to find me {@ArticleTheme=green energy} file in fr · help me finding a document with information about new tech in the {@ArticleTheme=energy market} · help me to find an article about the {@ArticleTheme=electricity market} · {@ArticleTheme=human rights} · I am interested in {@ArticleTheme=clean energy} · I am interested in knowing about {@ArticleTheme=privacy rights} in the eu · I am interested in knowing more about the {@ArticleTheme=consequence of the brexit} · I am looking for documents related to {@ArticleTheme=data security} · I am searching for a document · I am searching for a document in English about {@ArticleTheme=protection of environment} · I am searching for a document in French about {@ArticleTheme=consumer law} · I am searching for {@ArticleTheme=artificial intelligence} docs · I am searching for {@ArticleTheme=data protections} related documents · I am searching for French {@ArticleTheme=consumer rights} pdf · I am trying to find a report about {@ArticleTheme=eu environmental climate regulations} · I am trying to find an information about {@ArticleTheme=citizen rights} · I am trying to find an information in French concerning 	<ul style="list-style-type: none"> · {@ArticleTheme=données privées} · Il me faut un rapport qui parle de les {@ArticleTheme=lois étrangères} · Il me faut une revue à propos de {@ArticleTheme=données privées} · Il me faut une revue qui parle de {@ArticleTheme=effet de serre} · Il me faut une revue qui parle de {@ArticleTheme=l'égalité des genres} · Il me faut une revue qui parle de les {@ArticleTheme=migrants} · {@ArticleTheme=impact des déchets} · {@ArticleTheme=information confidentielle} · {@ArticleTheme=intelligence artificielle} · J'ai besoin que tu me trouves un article discutant de {@ArticleTheme=ai} · J'ai besoin que tu me trouves un document qui parle de {@ArticleTheme=déforestation} · J'ai besoin que tu me trouves un dossier au sujet de {@ArticleTheme=collection de données} · J'ai besoin que tu me trouves un rapport concernant {@ArticleTheme=déforestation} · J'ai besoin que tu me trouves un rapport qui discute de le {@ArticleTheme=droit d'expression} · J'ai besoin que tu me trouves un rapport qui discute de les {@ArticleTheme=lois étrangères} · J'ai besoin que tu me trouves un rapport qui met en avant {@ArticleTheme=ai} · J'ai besoin que tu me trouves une information à propos de le {@ArticleTheme=droit du citoyen} · Je dois chercher un article au sujet de la {@ArticleTheme=précarité} · Je dois chercher un document qui met en avant {@ArticleTheme=ressource de données} · Je dois chercher un journal mettant en avant {@ArticleTheme=l'intelligence artificielle} · Je dois chercher un journal qui met en avant {@ArticleTheme=changement climatique} · Je dois chercher un rapport qui met en avant {@ArticleTheme=pollution} · Je dois chercher un rapport qui parle de {@ArticleTheme=énergie verte} · Je dois chercher une revue discutant de le {@ArticleTheme=droit d'expression} · Je dois chercher une revue discutant de les {@ArticleTheme=migrants}
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<ul style="list-style-type: none"> · {@ArticleTheme=migrants rights in eu} · I am trying to find information concerning {@ArticleTheme=data privacy} · I have to find a document in relation to {@ArticleTheme=climate change policies} · I have to find a document in relation to {@ArticleTheme=European union environmental regulations} · I have to find a file in relation to {@ArticleTheme=climate change policies} · I have to find a file in relation to {@ArticleTheme=human rights} · I have to find an article related to {@ArticleTheme=data collection} · I have to search for an article in English about {@ArticleTheme=general data protection} · I look for an article about the environment on the search portal · I look for an article on the search portal about {@ArticleTheme=consumer rights} · I look for an article on the search portal about {@ArticleTheme=data governance} · I look for articles about {@ArticleTheme=environmental policies} · I look for articles about {@ArticleTheme=European commission} · I look for articles about {@ArticleTheme=ml} · I need a doc in fr related to {@ArticleTheme=data usage} · I need a document in English about {@ArticleTheme=blockchain} · I need a fr article in relation to {@ArticleTheme=blockchain} · I need a French doc related to {@ArticleTheme=single market} · I need a report in French about {@ArticleTheme=climate change programme} · I need a report in French about {@ArticleTheme=data protection} in the eu · I need a report in French about {@ArticleTheme=foreign policy} · I need an English report dealing with {@ArticleTheme=blockchain} · I need an English report dealing with {@ArticleTheme=foreign policy} · I need help looking for a report in English about {@ArticleTheme=nature conservation} · I want a doc on {@ArticleTheme=social inequality} · I want a file about {@ArticleTheme=information security} 	<ul style="list-style-type: none"> · Je dois chercher une revue en relation avec {@ArticleTheme=intelligence artificielle} · Je dois chercher une revue qui parle de {@ArticleTheme=énergie verte} · Je dois trouver un article qui met en avant {@ArticleTheme=pollution} · Je dois trouver un document concernant le {@ArticleTheme=droit des femmes} · Je dois trouver un journal au sujet de {@ArticleTheme=pollution} · Je dois trouver un journal en relation avec {@ArticleTheme=l'impact du brexit sur l'UE} · Je dois trouver un journal en relation avec {@ArticleTheme=l'inégalité sociale} · Je dois trouver un journal qui discute de {@ArticleTheme=artificial intelligence} · Je dois trouver un rapport parlant de {@ArticleTheme=artificial intelligence} · Je dois trouver une information qui parle de {@ArticleTheme=données} · Je veux que tu trouves un article à propos de {@ArticleTheme=taxe environnementale} · Je veux que tu trouves un article qui met en avant {@ArticleTheme=la précarité} · Je veux que tu trouves un article qui met en avant {@ArticleTheme=l'impact du brexit sur l'UE} · Je veux que tu trouves un article qui parle de {@ArticleTheme=ml} · Je veux que tu trouves un document en relation avec {@ArticleTheme=ml} · Je veux que tu trouves un dossier mettant en avant le {@ArticleTheme=droit de l'homme} · Je veux que tu trouves une information au sujet de {@ArticleTheme=taxe environnementale} · Je veux que tu trouves une revue concernant {@ArticleTheme=données sécurisés} · Je veux un article concernant changement de {@ArticleTheme=climat} · Je veux un article concernant {@ArticleTheme=open data portal} · Je veux un article qui parle de {@ArticleTheme=données} · Je veux un article qui parle de {@ArticleTheme=l'égalité des genres} · Je veux un document au sujet de {@ArticleTheme=machine learning} · Je veux un document qui discute de {@ArticleTheme=machine learning} · Je veux un document qui parle de le
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<ul style="list-style-type: none"> · I want a report about {@ArticleTheme=personal information security} · I want a report in fr about {@ArticleTheme=hr} · I want {@ArticleTheme=ai} docs · I want an English doc about {@ArticleTheme=citizen rights} · I want articles related to {@ArticleTheme=consumer rights and protection} · I want {@ArticleTheme=data technology} docs in French · I want docs specialized in {@ArticleTheme=social inequalities} · I want information in relation to {@ArticleTheme=gdpr} · I want to receive info related to {@ArticleTheme=sustainability impact} · I would like a doc about {@ArticleTheme=eu commission} · I would like a doc related to {@ArticleTheme=environmental changes in eu} · I would like a report related to {@ArticleTheme=social inequality} · I would like any article in English discussing about {@ArticleTheme=climate smart agriculture} · I would like to receive some help to find a doc related to {@ArticleTheme=offshore} topic · I would like to receive some help to find a doc related to the {@ArticleTheme=gdpr} · I would need your help to search for a file about {@ArticleTheme=climate environment} · I'm interested in finding information on {@ArticleTheme=data security} in eu · I'm looking for a paper discussing about {@ArticleTheme=climate change policy} · I'm looking for an article talking about {@ArticleTheme=ai} and {@ArticleTheme=ml} · I'm searching for a doc related to {@ArticleTheme=data usage rights} · I'm trying to collect information about {@ArticleTheme=European union environmental regulations} · I'm trying to find a file showing the {@ArticleTheme=consequence of climate change} · I'm trying to find an information in relation to {@ArticleTheme=the right to reuse data} · I'm trying to look for a document showing {@ArticleTheme=sustainability impact assessment} · I'm trying to look for an article showing {@ArticleTheme=retail regulations} · I'm trying to search for docs about 	<ul style="list-style-type: none"> {@ArticleTheme=droit des femmes} · Je veux un document qui parle de les {@ArticleTheme=lois étrangères} · Je veux un journal à propos de {@ArticleTheme=données privées} · Je veux une information parlant de {@ArticleTheme=climat} · Je veux une revue parlant de l' {@ArticleTheme=immigration} · Je voudrais que tu cherches un article qui parle de {@ArticleTheme=déforestation} · Je voudrais que tu cherches un document à propos de {@ArticleTheme=réglementations écologiques} · Je voudrais que tu cherches un document au sujet de {@ArticleTheme=collection de données} · Je voudrais que tu cherches un document concernant {@ArticleTheme=l'utilisation des données} · Je voudrais que tu cherches un document parlant de la {@ArticleTheme=citoyenneté} · Je voudrais que tu cherches un journal discutant de le {@ArticleTheme=droit du consommateur} · Je voudrais que tu cherches un rapport mettant en avant {@ArticleTheme=intelligence artificielle} · Je voudrais que tu cherches un rapport qui parle de {@ArticleTheme=environnement} · Je voudrais que tu cherches une information au sujet de la {@ArticleTheme=précarité} · Je voudrais que tu cherches une information au sujet de le {@ArticleTheme=droit du citoyen} · Je voudrais que tu cherches une information qui met en avant {@ArticleTheme=utilisation des données} · Je voudrais trouver un article qui met en avant {@ArticleTheme=changement climatique} · Je voudrais trouver un journal qui parle de {@ArticleTheme=blockchain} · Je voudrais un PDF concernant les {@ArticleTheme=énergies renouvelables} écrit en 2020 par la commission européenne · La {@ArticleTheme=citoyenneté} · {@ArticleTheme=la gouvernance des données} · La {@ArticleTheme=loi sociale} · La {@ArticleTheme=précarité} · {@ArticleTheme=la sécurité de données} · Le {@ArticleTheme=droit de l'homme} · Le {@ArticleTheme=droit des femmes}
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<ul style="list-style-type: none"> · {@ArticleTheme=equality of rights} · I'm trying to search for docs concerning {@ArticleTheme=data privacy} topic · {@ArticleTheme=immigration} · {@ArticleTheme=impact of ai on education} · {@ArticleTheme=information security} · {@ArticleTheme=information technology} · {@ArticleTheme=intellectual property} · is there a doc about {@ArticleTheme=big data} · is there a doc about gdpr in the search portal · is there a document talking about {@ArticleTheme=data processing regulation} on the search portal · is there a file providing information on the {@ArticleTheme=European comission} · is there an article about {@ArticleTheme=sustainability} · is there any article talking about {@ArticleTheme=migration} on the search portal · is there any doc about {@ArticleTheme=European data} · is there any document having as a main topic {@ArticleTheme=green economy} · is there any file giving information on {@ArticleTheme=eu citizenship} · is there any report talking about {@ArticleTheme=gender inequality} · is there any report talking about {@ArticleTheme=open data} · is there any report talking about {@ArticleTheme=renewable energy in eu} · is there in the search portal a file talking about {@ArticleTheme=health inequalities} · I've to find a report covering {@ArticleTheme=ml} topic · look for a doc about {@ArticleTheme=impact of ai on education} · look for a document related to {@ArticleTheme=citizen rights} · look for a document related to {@ArticleTheme=data security} · look for a document related to {@ArticleTheme=renewable sources} · look for a file on the search portal about {@ArticleTheme=climate change} · look for article concerning {@ArticleTheme=personal data} topic · {@ArticleTheme=migration} · my research concerns {@ArticleTheme=data technology} topic · my research concerns info 	<ul style="list-style-type: none"> · Le {@ArticleTheme=droit d'expression} · Le {@ArticleTheme=droit du citoyen} · Le {@ArticleTheme=droit du consommateur} · {@ArticleTheme=l'égalité des genres} · Les {@ArticleTheme=lois étrangères} · Les {@ArticleTheme=migrants} · L' {@ArticleTheme=immigration} · {@ArticleTheme=l'impact du brexit sur l'UE} · {@ArticleTheme=l'inégalité des sexes} · {@ArticleTheme=l'inégalité sociale} · {@ArticleTheme=l'intelligence artificielle} · {@ArticleTheme=l'utilisation des données} · Ma recherche concerne un rapport qui discute de {@ArticleTheme=effet de serre} · Ma recherche concerne une revue qui met en avant {@ArticleTheme=utilisation des données} · {@ArticleTheme=machine learning} · {@ArticleTheme=ml} · {@ArticleTheme=panneaux photovoltaïque} · Peux-tu me trouver un article à propos de {@ArticleTheme=panneaux photovoltaïque} · Peux-tu me trouver un document mettant en avant {@ArticleTheme=changement de climat} · Peux-tu me trouver un journal concernant {@ArticleTheme=open data portal} · Peux-tu me trouver un journal mettant en avant le {@ArticleTheme=droit de l'homme} · Peux-tu me trouver un journal mettant en avant le {@ArticleTheme=droit du consommateur} · Peux-tu me trouver une information à propos de {@ArticleTheme=planète verte} · Peux-tu me trouver une information en relation avec {@ArticleTheme=ml} · Peux-tu me trouver une revue discutant de {@ArticleTheme=fonte des glaces} · Peux-tu chercher un document concernant {@ArticleTheme=réchauffement climatique} · Peux-tu chercher un document discutant de {@ArticleTheme=ai} · Peux-tu chercher un dossier parlant de {@ArticleTheme=impact des déchets}
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<ul style="list-style-type: none"> {@ArticleTheme=security} subject · my research is about {@ArticleTheme=retail regulations} · my research is based on finding a document about {@ArticleTheme=social law in eu} · my research is related to {@ArticleTheme=eu environmental policy} · {@ArticleTheme=nature conversation} · {@ArticleTheme=network security} · {@ArticleTheme=offshore installations} · {@ArticleTheme=open data portal} · {@ArticleTheme=overgrazing} · {@ArticleTheme=personal information security} · please help me finding a document about {@ArticleTheme=freedom of speech} · please help me finding an article about {@ArticleTheme=sustainable development goals} · please help me searching for a doc providing info about {@ArticleTheme=climate policies in eu} · please help me searching for a report having information about {@ArticleTheme=European climate change programme} · please look for an article discussing about {@ArticleTheme=health inequalities in Europe} · please search a file concerning {@ArticleTheme=electricity market} · please search a file concerning {@ArticleTheme=general regulations} · please search a file concerning {@ArticleTheme=open data portal} · please search for a file about {@ArticleTheme=freedom of expression} · please search for a report about {@ArticleTheme=renewable energy} · please search for an article in en about {@ArticleTheme=reusable data} · pls help me searching for a report in English dealing with {@ArticleTheme=data collection} · pls I need a doc about {@ArticleTheme=environmental taxes} · pls I would like any report related to {@ArticleTheme=ai on education} · pls look for an article about {@ArticleTheme=gdpr} in eu · pls look for an article showing the impact of {@ArticleTheme=climate change} · pls look for an article showing the {@ArticleTheme=impact of migration} · pls search docs about {@ArticleTheme=social laws} · {@ArticleTheme=polluting} 	<ul style="list-style-type: none"> · Peux-tu chercher une information concernant {@ArticleTheme=changement de climat} · Peux-tu chercher une revue à propos de le {@ArticleTheme=droit du citoyen} · Peux-tu chercher une revue à propos de l' {@ArticleTheme=immigration} · Peux-tu chercher une revue au sujet de {@ArticleTheme=la gouvernance des données} · {@ArticleTheme=planète verte} · {@ArticleTheme=pollution} · {@ArticleTheme=portail de données} · {@ArticleTheme=protection de l'environnement} · {@ArticleTheme=réchauffement climatique} · {@ArticleTheme=réglementations écologiques} · {@ArticleTheme=réglementations environnementales} · {@ArticleTheme=ressources de données} · {@ArticleTheme=rgpd} · {@ArticleTheme=sécurité des données} · Stp je voudrais un document qui parle de {@ArticleTheme=environnement} · Stp je voudrais un rapport au sujet de {@ArticleTheme=gouvernance des données} · {@ArticleTheme=taxe environnementale} · Trouve moi un article au sujet de {@ArticleTheme=climat} · Trouve moi un article parlant de {@ArticleTheme=artificial intelligence} · Trouve moi un document au sujet de {@ArticleTheme=taxe environnementale} · Trouve moi un document concernant {@ArticleTheme=données sécurisés} · Trouve moi un dossier concernant le {@ArticleTheme=droit de l'homme} · Trouve moi un dossier concernant le {@ArticleTheme=droit des femmes} · Trouve moi un dossier qui parle de {@ArticleTheme=blockchain} · Trouve moi un rapport en relation avec la {@ArticleTheme=loi sociale} · Trouve moi une information à propos de {@ArticleTheme=blockchain} · Trouve moi une information discutant de les {@ArticleTheme=migrants}
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<ul style="list-style-type: none"> · {@ArticleTheme=pollution} · {@ArticleTheme=privacy} · {@ArticleTheme=privacy rights} · {@ArticleTheme=property rights} · {@ArticleTheme=protection of environment} · {@ArticleTheme=renewable energy} · {@ArticleTheme=retail regulations} · {@ArticleTheme=rights of citizenship} · search · search an article about {@ArticleTheme=right of citizen} · search for a doc with info about {@ArticleTheme=renewable technologies} · search for an article about {@ArticleTheme=machine learning} · search for {@ArticleTheme=ml} docs pls · searching for an article showing {@ArticleTheme=the importance of ml} · searching for article · searching for document · searching for document in {@ArticleTheme=ecology} · searching for {@ArticleTheme=ecology} document · searching for files talking about {@ArticleTheme=open data portal} · searching for {@ArticleTheme=green energy} document · {@ArticleTheme=security} · send me a doc discussing about {@ArticleTheme=renewable sources} · {@ArticleTheme=single market in Europe} · {@ArticleTheme=social inequality} · {@ArticleTheme=social law in eu} · {@ArticleTheme=sustainability transition} · {@ArticleTheme=sustainable development goals} · {@ArticleTheme=sustainable impact assessment} · the {@ArticleTheme=consequence of climate change} · {@ArticleTheme=the consequence of the brexit} · the {@ArticleTheme=impact of ai on data privacy} · {@ArticleTheme=the importance of ml} · {@ArticleTheme=the right to reuse data} · {@ArticleTheme=voting rights} 	<ul style="list-style-type: none"> · Trouve moi une information en relation avec {@ArticleTheme=biologie} · Trouve moi une information mettant en avant {@ArticleTheme=gaspillages} · {@ArticleTheme=utilisation des données} · Y a-t-il un article mettant en avant {@ArticleTheme=biosphère} · Y a-t-il un dossier qui discute de {@ArticleTheme=machine learning} · Y a-t-il un rapport parlant de l' {@ArticleTheme=immigration} · Y a-t-il un document mettant en avant {@ArticleTheme=combat contre le réchauffement climatique} · Y a-t-il un journal en relation avec {@ArticleTheme=bouleversement météorologique} · Y a-t-il un rapport à propos de {@ArticleTheme=la sécurité de données} y a-t-il un rapport parlant de la loi sociale
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6.3 List of responses for the single turn response intents

Intent	English	French
Foreign	Currently, I only speak English and French. I will learn new languages soon. How can I hel	Actuellement, je ne parle que l'anglais et le français. J'apprendrai bientôt de nouvelles langues. Comment puis-je vous aider?
Greetings	<p>- How can I help you today? Are any specific topics of interest to you?</p> <p>- How may I help you? Which documents would you like to search for?</p>	<p>Comment puis-je vous aider aujourd'hui ? Des sujets spécifiques vous intéressent-ils ?</p> <p>Comment puis-je vous aider ? Quels documents souhaitez-vous rechercher ?</p>
Help	Happy to guide you in your search journey. To make use of my assistance, please specify the topic you are looking for or find additional help [here](https://op.europa.eu/en/web/about-us/faq)	Heureux de vous aider ! Je peux vous guider dans votre recherche. Veuillez préciser le sujet que vous recherchez. Vous pouvez également trouver une aide supplémentaire [ici](https://op.europa.eu/en/web/about-us/faq).
Mood	I am well, thank you. My main objective is to help you search. How can I help?	Je vais bien, merci. Mon principal objectif est de vous aider à faire des recherches, quels sujets recherchez-vous ?
Name	I am the Publications Office Assistant. It is a pleasure to meet you. I can help you to find information on the portal. What are you interested in?	Je suis l'assistant de l'Office des publications. C'est un plaisir de vous rencontrer. Je peux vous aider à trouver des informations sur le portail de l'Office des publications. Qu'est-ce qui vous intéresse ?
Questions	Thank you for your interest. My main goal is to help you in your search journey. How can I help?	Merci de votre intérêt. Mon objectif principal est de vous aider dans votre recherche. Comment puis-je vous aider?
Unknown	Sorry, I did not understand the request. Please write "I am looking for documents about" followed by the topic of interest. Alternatively, type "help" for additional assistance.	Désolé, je n'ai pas compris. Pourriez-vous s'il vous plaît taper "Je cherche un document sur" avec le sujet qui vous intéresse. Vous pouvez également taper "aide" pour obtenir une aide supplémentaire.

6.4. Entity types and list

All authors' metadata can be detected with a pattern. Indeed, by defining where they stand in a sentence, every possible author would be detected if they are well placed. Same for the date metadata.

Entities	Type	Examples in English	Examples in French
Article author	Pattern.any	<ul style="list-style-type: none"> · [in {ArticleYear} [written by {ArticleAuthor}]] · [written by {ArticleAuthor} [in {ArticleYear}]] 	<ul style="list-style-type: none"> · [en {ArticleYear} [(de par) {ArticleAuthor}]] · [écrit par {ArticleAuthor} [en {ArticleYear}]]
Article language	List	<ul style="list-style-type: none"> · French · English 	<ul style="list-style-type: none"> · Français · Anglais
Article theme	Machine learned	<ul style="list-style-type: none"> · See separate table with user stories 	<ul style="list-style-type: none"> · See separate table with user stories
Article type	List	<ul style="list-style-type: none"> · Doc · Ebook · Html · Image · Multimedia · Pdf · Postcard · Poster · Print · Xml 	<ul style="list-style-type: none"> · Doc · Ebook · Html · Image · Multimedia · Pdf · Postcard · Poster · Print · Xml
Article year	Pattern.any	<ul style="list-style-type: none"> · [in {ArticleYear} [written by {ArticleAuthor}]] · [written by {ArticleAuthor} [in {ArticleYear}]] 	<ul style="list-style-type: none"> · [en {ArticleYear} [(de par) {ArticleAuthor}]] · [écrit par {ArticleAuthor} [en {ArticleYear}]]

6.5. Entities by user story

English. User story 1 - GDPR
gdpr,privacy,data,security,data privacy,data security,computer security,information security,data protections,corporate governance,network security,data management,information technology,data rights,intellectual property,cyberlaw,data processing,cyberterrorism,cybercrime,data store,cybersecurity,cyber,cloud computing,privacy rights,data processing-regulation,personal information security,open data portal,blockchain,the right to reuse data,data technology,data protection,the impact of AI on data privacy,data collection,impact of AI on education,the importance of ML,Data privacy

regulations,ai,cookies,web,personal data,processing,data protection commission,data controller,data processor,consent,profiling,genetic data,data,data subject,pseudonymisation,right of access,restriction on processing,consent,e-privacy,directive,regulation,electronic communication,european data protection supervisor,data processing,storage,ai regulation,personal data,social networking site,medical information,ip address,data processor,data protection officer,accountability,consent,privacy impact assessment,pia,profiling,territorial scope,sensitive data,data processor,profiling,subject access,data transfer,cyber security,safetycookies,web,personal data,processing,data protection commission,data controller,data processor,consent,profiling,genetic data,data,data subject,pseudonymisation,right of access,restriction on processing,consent,e-privacy,directive,regulation,electronic communication,european data protection supervisor,data processing,storage,ai regulation,personal data,social networking site,medical information,ip address,data processor,data protection officer,accountability,consent,privacy impact assessment,pia,profiling,territorial scope,sensitive data,data processor,profiling,subject access,data transfer,cyber security,safety

English. User story 2 - Consumer rights

consumer rights,consumer protection,civil rights,human rights,immigration,health care,women's rights,rights of citizenship,civil liberties,constitutional rights,property rights,freedom of speech,voting rights,freedom of religion,freedoms,freedoms of citizens,free speech,democracy,privacy,constitution,the consequence of the brexit,blockchain,consumer protection in E commerce,consumer rights and protection,citizen rights in EU,migration,equality of rights in EU,foreign policy,citizenship,single market in Europe,social law in EU,social inequality,health inequalities in Europe,consumer law,european commission,retail regulations,consumers,right to safety,right to be informed,right to choose, right to be heard,right to seek redressal,right to consumer education,eu consumer agenda, the right to vote,the right to stand ,the right to,the european parliament,municipal elections,administration ,the right of access,the right to petition,freedom of movement,freedom of residence,consular protection,diplomatic protection,language rights,democratic participation,air passenger rights,flight disruption,flight cancellation,flight compensation,social security

English. User story 3 - Climate change

ecology,green energy,environment,biology,ecosystems,environmental,biodiversity,pollution,global warming,climate change,deforestation,polluting,greenhouse gas,overgrazing,ecological,energy,agriculture,agricultural,farming,agronomy,the consequence of climate change,EU environmental policy,sustainability transition,economic social cultural rights,climate smart agriculture,protection of environment,green economy,environmental policies,climate change policy,sustainable development goals,nature conservation,european union environmental regulations,offshore installations,climate environment,environmental taxes,climate change policies,renewable energy,sustainability impact assessment,european climate change programme,climate,global warming,earth,biosphere,global,weather,greenhouse gas,albedo,lithosphere,shift,environmental,warming,continental drift,hydrosphere,solar radiation,planet,hadean,proxy,ice core,moraine,cloud,deforestation,sustainability,fossil fuel,carbon cycle,change,depolarization,earthward,mutation,sunlight,revolutionize,nationalize,transform,earthly,nationalization,destabilize,earthly,earthen,terrestrial,changeeful,scientist,mutate,sublunary,alter,alteration,transmute,unchanging,immortalize,borehole ,changer,terra,flora,immutable,liberalize,fauna,terrene,deaden,transformation,secularization,conversion,transmutation,convert,innovate,transformational,dinge,diversify,modifiable,diversification,demotion,unchanged,loudden,chasten,barbarize,transformer,replace,vesiculate,steepen,everchanging,denaturalize,planetary,earther,dynamize,earthbound,nazify,decimalization,professionalize,earthling,etherealize,suburbanize,stiffen,plasticize,deaminate,overchange,eroticize,immutation,unscramble,europeanize,classicize,sentimentalize,assibilate,earthian,downshift,transitivize,archaize,dissimilate,transchange,inactivate,immaterialize,remew,coarsen,metamorphosis,earthman,incandesce,our,embrittle,keratinize,modify,earthlight,symmetrize,decimalize, stabilize,earthless,brutalize,conventionalize,opacify,denature,normalize,flocculate,radicalize,converter,uniformize,paganize, changelog,hydrolyze,tellurian,vascularize,modernize,orientalize,peron,earthscape,transfigure,democratize,metamorphic,transaminate,world,orogeny,vulgarize,earthlike,communization,earthwoman,changes,gelatinize,caseate,desensitize,unsanctify,ize,transpeciate,transmogryfy,converse,earthboard,intervary,subsoil,geo,dehydrogenate,terrestrially,entitize,earthshine,ground,assimilate,reflate,exoterrene,glamorize,filtration,slenderize,impact,kaleidoscopic,transearth,replacement,glebe,geoengineer ing,obsolesce,unchangeable,shortchange,perglaciation,sorcerize,monopole,changing,alternation,economic,makeover,creolize,depolarize,masculinize,future,environment,activate,modification,oxidise,opalize,focus,diatomite,metamorphose,variation,unearth,conditions,emulsify,vitalize,switch,affect,terraform,policy,deepen,current,global climate change,edit,seismic,earthborn,atmosphere,opsonize,situation,concerned,exchanger,terraforming,earthsmen,urbanize,ulcerate, terraceous,automatize,complexify,regress,progress,converttee,effect,difficult,extrasolar,counterchange,blur,achromatize,pedsphere,transition,possible,continue,recombine,likely,deformation,bestialize,problem,ways,concerns,approaches,decarboxylate,suggests,should,versicolour,suggest,orbiter,maunder minimum,measures,step,alkalinize,critical,challenges,view,possibility,rarefy,atterration,volatilize,outmode,,need,changeset, implications,see,beyond,depends,stability,mean,earthrise,continues,result,issues,soil,agenda,means, follow,particular,concern, cambist,issue,clear,electrically,further,create,unlikely,alchemize,continuing,hemisphere,particularly,creating,reflect,better,es

pecially, globally, crisis, noting, indeed, very, moreover, strategy, overskies, decrepitate, industrialize, needs, reflects, trend, understratum, consider, acetylate, approach, consensus, important, context, term, suggested, move, reason, yet, will, that, measure, idea, expect, arterialize, uncertainty, process, due, demythologize, developing, differences, gaia, deodorize, meant, focused, fact, debate, would, consequences, untune, policies, allegorize, mythologize, extraplanetary, uglify, loam, decentralize, earthworm, magnetosphere, biodiversity, isomerize, emissions, desertification, anthropogenic, carbon, environmentalism, climatic, ecosystems, pollution, ecology, acidification, conservation, oceans, overfishing, overpopulation, climat, globalization, climatology, glaciers, biofuel, emitters, droughts, terrorism, pandemic, urbanization, disasters, protectionism, boreal, wmo, forests, agriculture, obesity, multilateral, conservationists, eco, impacts, freshwater, humankind, catastrophe, fisheries, habitats, epidemics, eutrophication, mitigation, pastoralism, geopolitics, greening, naturalize, forestry, demagnetize, unearthly, clod, depersonalize, internationalize, earthbag, vulcanize, eartheater, vivify, reorient, geography, atmospheric physics, weathering, grind, alterable, synoptic scale meteorology, decalcify, tectonic, mesoplanet, topsoil, precession, earthship, cryosphere, apollo, 7 continent, one moon, blue planet, our planet, saponify, seven continent, land, oblate spheroid, tumulus, extreme weather, this world, vitrify, earthhole, territorialize, overland, worldwide, geosphere, plate tectonics, globe, militarize, volcanic eruptions, sahara, exoatmospheric, dirt, moorland, dojin, geophagic, earthbank, ipcc, equatorial, geoheliocentrism, triocycle, co2, interplanetary, landward, change order, sun, mother earth, geospace, live on, energy, asthenosphere, decarbonization, decarbonise, sex change, decarbonizing, polluter, catastrophism, environmentalists, undernutrition, gigaton, biopiracy, paleoclimatology, intermittent, glaciology, icecaps

French. User story 1 - RGPD

sécurité de données, open data portal, gouvernance des données, blockchain, utilisation des données, machine learning, ml, ai, artificial intelligence, intelligence artificielle, données privés, données sécurisés, collection de données, données, ressource de données, RGPD, GDPR, information confidentielle, données confidentiels, portail de données, la sécurité de données, la gouvernance des données, l'intelligence artificielle, l'utilisation des données, protection de données, cookies, web, données personnelles, traitement, commission de protection des données, contrôleur de données, processeur de données, consentement, profilage, données génétiques, données, personne concernée, pseudonymisation, droit d'accès, restriction du traitement, consentement

French. User story 2 - Droits du consommateur

l'égalité des genres, l'inégalités des sexes, des disparités dans la société, la loi sociale, le droit du consommateur, l'immigration, le droit de l'homme, le droit du citoyen, le droit des femmes, la précarité, les lois étrangères, l'impact du brexit sur l'UE, le droit d'expression, l'inégalité sociale, les migrants, la citoyenneté, consommateurs, droit à la sécurité, droit d'être informé, droit de choisir, droit d'être entendu, droit de demander réparation, droit à l'éducation des consommateurs, programme de l'ue en faveur des consommateurs, droit de vote, droit de se présenter, droit de, parlement européen, élections municipales, administration, droit d'accès, droit de pétition, liberté de circulation, liberté de résidence, protection consulaire, protection diplomatique, droits linguistiques, participation démocratique, droits des passagers aériens, perturbation des combats, annulation de vol, compensation de vol, sécurité sociale

French. User story 3 - Changement climatique

climat, environnement, changement climatique, effet de serre, bouleversement météorologique, fonte des glaces, impact des déchets, gaspillages, réglementations écologiques, changement de climat, taxe environnementale, déforestation, pollution, énergie verte, écologie, réglementations environnementales, protection de l'environnement, énergie renouvelable, biologie, biosphère, planète verte, réchauffement climatique, environnement, panneaux photovoltaïque, combat contre le réchauffement climatique, climat, réchauffement climatique, terre, biosphère, global, météo, gaz à effet de serre, albedo, lithosphère, changement, environnemental, réchauffement, dérive des continents, hydrosphère, rayonnement solaire, planète, hadaan, proxy, noyau de glace, moraine, nuage, déforestation, durabilité, combustible fossile, cycle du carbone, changement, dépoliarisation, vers la terre, mutation, lumière solaire, révolutionner, nationaliser, transformer, terrestre, nationaliser, déstabiliser, terrien, terreux, terrestre, changeant, scientifique, muter, sublunaire, modifier, altération, transmuter, immuable, immortaliser, forer, changer, terra, flore, immuable, libéraliser, faune, terrestre, éteindre, transformation, sécularisation, conversion, transmutation, convertir, innover, transformer, dinge, diversifier, modifiable, diversification, démotioin, inchangé, louden, chasten, barbarize, transformer, remplacer, vésiculer, steepen, everchanging, dénaturer, planétaire, earther, dynamize, earthbound, nazify, decimalization, professionnaliser, terrien, étheré, banlieusard, raidir, plastifier, désamorcer, sur-échanger, érotiser, immuter, démêler, européeniser, classiciser, sentimentaliser, assibiler, terrien, rétrograder, transitiver, archaïser, dissoudre, transchanger, inactiver, immatéraliser, remanier, dégrossir, métamorphoser, terrien, incandescent, notre, fragiliser, kéra

tiniser, modifier, terrien, symétriser, décimaliser, stabiliser, terrien, brutaliser, conventionnaliser, opacifier, dénaturer, normaliser, floucler, radicaliser, convertir, uniformiser, paganiser, changer, hydrolyser, tellurique, vasculariser, moderniser, orientaliser, pérorer, paysage

terrestre, transfigurer, démocratiser, métamorphoser, transaminer, monde, orogénèse, vulgariser, terrien, communisation, terrienne, changements, gélatiniser, caséifier, désensibiliser, désanctifier, ize, transpecire, transmogrifier, converser, tableau de terre, intercaler, sous-

sol, géo, déshydrogène, terrestrement, enticher, terrien, sol, assimiler, reflater, exoterrène, glamouriser, filtrer, élaner, impact, kaléidoscopique, transterrestre, remplacement, glèbe, géoingénierie, obsolescence, immuable, court-circuit, périglaciation, sorceller, monopole, changement, alternance, économique, relooking, créoliser, dépoliariser, masculiniser, avenir, environnement, activer, modification, oxyder, opaliser, focaliser, diatomite, métamorphoser, variation, déterrer, conditions, émulsionner, vitaliser, changer, affecter, terraformer, politique, approfondir, actuel, changement climatique global, éditer, sismique, terrien, atmosphère, opsoniser, situation, concerné, échangeur, terraformer, terrien, incandescence, notre, fragiliser, kératiniser, modifier, lisser, symétriser, décimaliser, stabiliser, terrien, brutaliser, conventionnaliser, opacifier, dénaturer, normaliser, floculer, radicaliser, convertir, uniformiser, paganiser, changer, hydrolyser, tellurique, vasculariser, moderniser, orientaliser, pérorer, paysage

terrestre, transfigurer, démocratiser, métamorphoser, transaminer, monde, orogénèse, vulgariser, terrien, communiser, terrienne, changer, gélatiniser, caséifier, désensibiliser, insanctifier, ixer, transpecer, transmogrifier, converser, tableau de terre, intervalle, sous-sol, géo, déshydrogène, terrestrement, entitiser, terrien, assimiler, reflater, exoterrène, glamouriser, filtrer, élaguer, impact, kaléidoscopique, transterrestre, remplacement, glèbe, géoingénierie, obsolescence, immuable, court-circuit, périglaciation, sorceller, monopole, changement, alternance, économique, relooking, créoliser, dépoliariser, masculiniser, avenir, environnement, activer, modification, oxyder, opaliser, focaliser, diatomite, métamorphoser, variation, déterrer, conditions, émulsionner, vitaliser, changer, affecter, terraformer, politique, approfondir, actuel, changement climatique global, éditer, sismique, terrien, atmosphère, opsoniser, situation, concerné, échangeur, terraformer, terrien, urbaniser, ulcérer, terrasser, automatiser, complexifier, régresser, progresser, convertir, effet, difficile, extrasolaire, contrechanger, brouiller, achromatiser, pérosphère, transition, possible, continuer, recombinaison, probable, déformation, bestialiser, problème, moyens, préoccupations, approches, décarboxylater, suggère, devrait, versicolore, suggérer, orbiteur, mauder

minimum, mesures, étape, alcaliniser, critique, défis, vue, possibilité, raréfier, attraction, volatiliser, outmode, besoin, changeset, implications, voir, au-delà, dépend, stabilité, moyen, lever de

terre, continue, résultat, questions, sol, agenda, moyens, suivre, particulier, préoccupation, cambiste, question, clair, électriquement, plus

loin, créer, improbable, alchimiser, continuer, hémisphère, particulièrement, créer, réfléchir, mieux, surtout, globalement, crise, noter, en effet, très, de plus, stratégie, surkies, décrépir, industrialiser, besoins, reflète, tendance, sous-stratum, considérer, acétyler, approche, consensus, important, contexte, terme, suggéré, bouger, raison, pourtant, sera, que, mesurer, idée, attendre, artérialiser, incertitude, processus, dû, démythologiser, développer, différences, gaia, désodoriser, signifier, ciblé, fait, débat, serait, conséquences, désaccorder, politiques, allégoriser, mythologiser, extraplanétaire, uglifier, glaise, décentraliser, ver de terre, magnétosphère, biodiversité, isomériser, émissions, désertification, anthropique, carbone, environnementalisme, climatique, écosystèmes, pollution, écologie, acidification, conservation, océans, surpêche, surpopulation, climat, mondialisation, climatologie, glaciers, biocarburants, émetteurs, sécheresses, terrorisme, pandémie, urbanisation, catastrophes, protectionnisme, boréal, omm, forêts, agriculture, obésité, multilatéral, conservationnistes, éco, impacts, eau

douce, humanité, catastrophe, pêche, habitats, épidémies, eutrophisation, atténuation, pastoralisme, géopolitique, verdissement, naturaliser, foresterie, démagnétiser, surnaturel, motte, dépersonnaliser, internationaliser, sac de terre, vulcaniser, réchauffeur de terre, vivifier, réorienter, géographie, physique atmosphérique, altération, broyage, modifiable, météorologie à l'échelle synoptique, décalcifier, tectonique, mésoplanète, terre végétale, précession, vaisseau terrestre, cryosphère, apollo, 7 continent, une lune, planète bleue, notre planète, saponifier, sept continent, terre, sphéroïde oblate, tumulus, climat extrême, ce

monde, vitrifier, trou de terre, territorialiser, overland, worldwide, geosphere, plate tectonics, globe, militarize, volcanic eruptions, sahara, exoatmosphérique, dirt, moorland, dojin, geophagic, earthbank, ipcc, equatorial, geoheliocentrism, triocite, co2, interplanetary, landward, ordre de changement, soleil, terre-

mère, géospace, vivre, énergie, asthénosphère, décarbonisation, décarboniser, changement de

sexe, décarbonisation, pollueur, catastrophisme, écologistes, dénutrition, gigaton, biopiraterie, paléoclimatologie, intermittence, glaciologie, calottes glaciaires

6.6. Patterns

The pattern is a template Utterance assigned to an Intent, which contains syntax to identify Entities in a pre-defined sentence form.

English Pattern	French Pattern
[i (am 'm m)]	[(voudrais souhaiterais cherche)]
[(have receive send bring)]	[(à propos discutant parlant)]
[(want would like)]	[(un une)]
[(human rights hr)]	[(ecommerce e commerce)]
[(give provide)]	[(de à a)]
[(looking searching researching)]	[(de du)]
[(please pls)]	[(écrit publié rédigé)]
[(E commerce ecommerce e-commerce)]	[(article revue rapport)]
[(a an any)]	[(svp s'il te plait)]
[(look for search for try to find)]	[(mon ton)]
[(commission comission)]	[(ta ton)]
[(do not don't dont)]	[(au sujet concernant qui parle)]
[(written published)]	[(ue union européenne union europeenne)]
[(document article paper)]	[(gdpr rgpd)]
[(topic subject)]	[(veux voudrais souheterais)]
[(program programme programe)]	[(y a til y a t il y at-il)]
[(interesting interested)]	[(de par du)]
[(technology tech technologies)]	[(document article papier)]
[(related to deal with in relation to concerns)]	[(topic sujet)]
[(in from around)]	[(eu europe ue)]
[(english en)]	[(femmes femme)]
[(gdpr rgpd)]	[(homme hommes)]

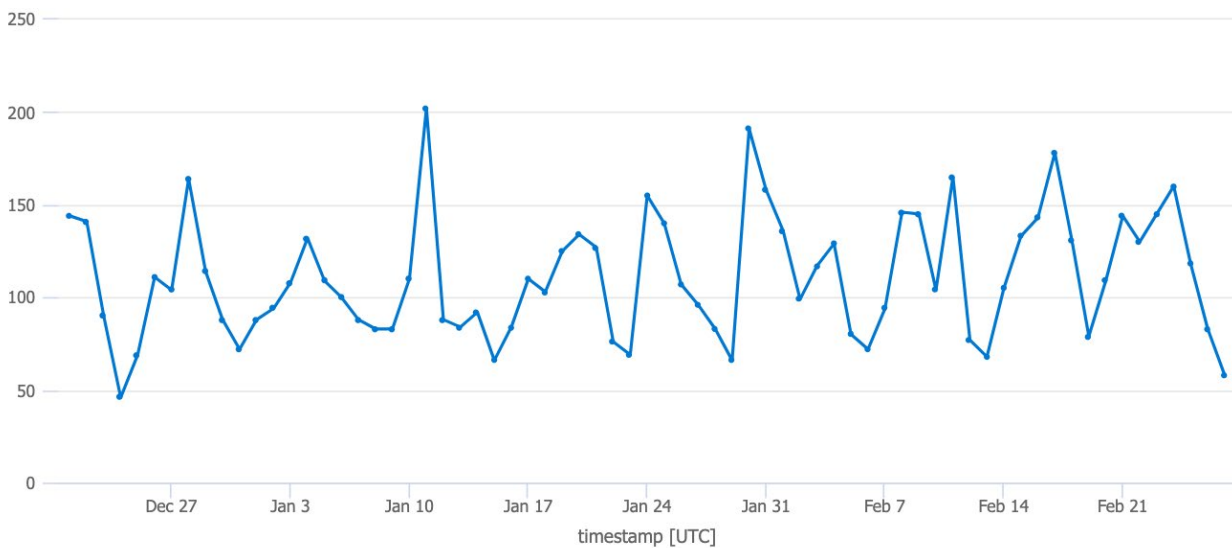
[(research researchs researches)]	[(IA Intelligence Artificielle)]
[(eu europe ue)]	[(ML Machine learning)]
[(french fr)]	
[(women woman)]	
[(men man)]	
[(can could)]	
[(interesting interested)]	
[(AI Artificial Intelligence)]	
[(ML machine learning)]	
[(does not doesn't doesn't)]	

6.7. Report

Here is a sample report for the OPIA generated for the interval 21.12.2021-27.02.2022

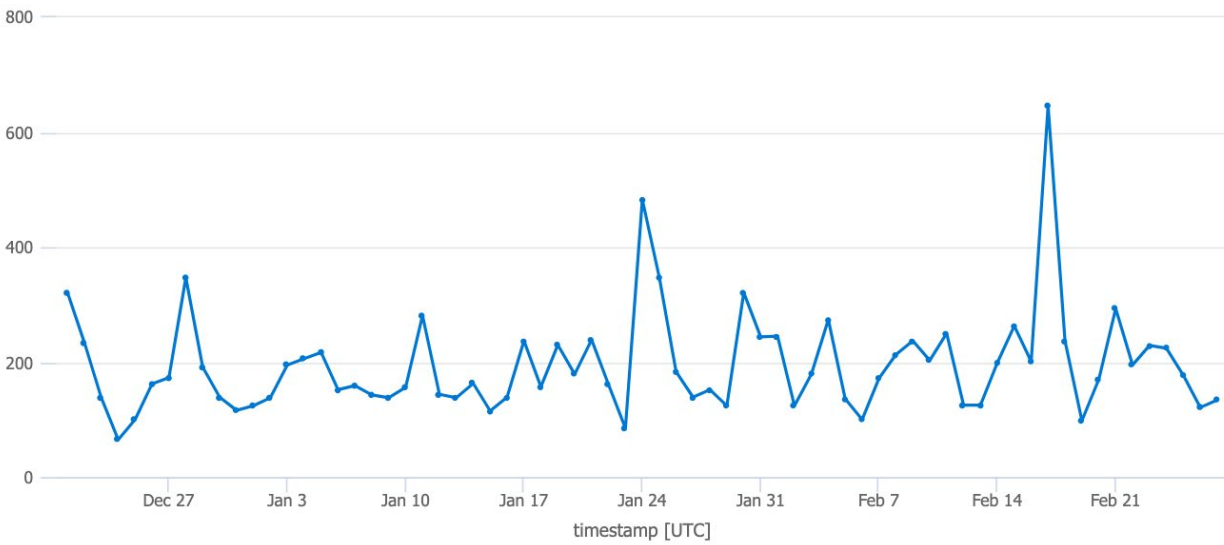
6.7.1. Conversations

Conversations number per day

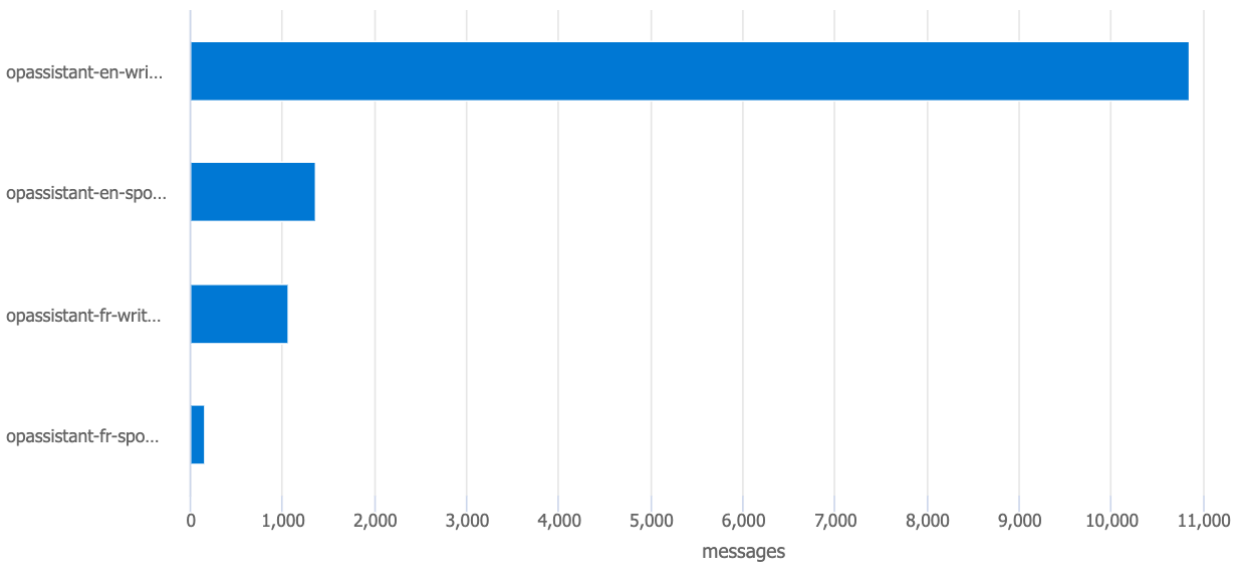


6.7.2. Messages

Messages number per day

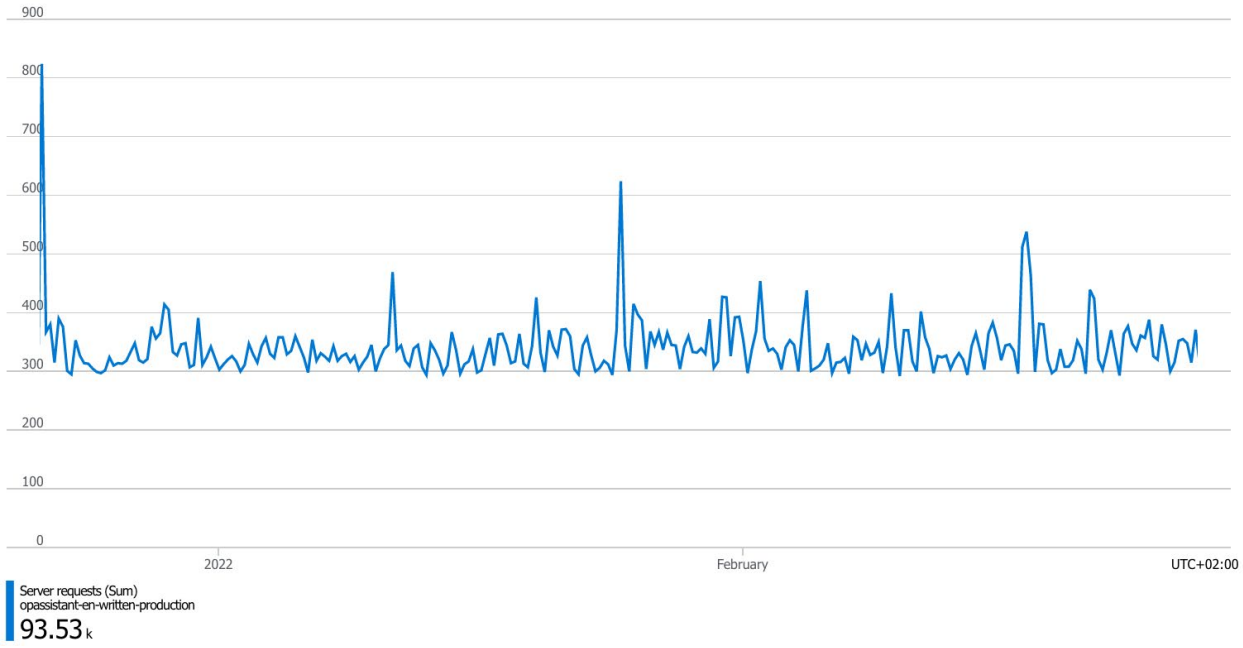


6.7.3. Number of messages by bot



6.7.4. Performance metrics

Server requests



response time

