Online Terminological Resources in French Sign Language and their Users: an Exploratory Study [*]

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Abstract

This article presents the results of an exploratory study targeting French Sign Language (LSF) interpreters and aiming to better understand how and why they use online terminological resources in LSF. It focuses on the users' motivations for using these resources, their actual usage behaviour, as well as their perceived satisfaction with the tools. The results of this exploratory study serve as a starting point for a broader reflection on the integration of multimodality into resource design.

Keywords

LSF, users study, lexicography, dictionary, term banks

1. Introduction

This paper aims at discussing the use and usability of existing online terminological resources in French Sign Language (LSF) for a specific category of users: French-LSF interpreters, through the findings of an exploratory empirical study. The study of terminology in French Sign Language is still in its early days, and while research in the field is gaining momentum, the theoretical landscape is not in any way comparable to that of spoken languages. To introduce the key concepts used in this paper, the first section exposes the general context in which it takes place. Research questions and methodology are then presented (Section 2). The third part of this article reports the results of the study, followed by its limitations (Section 4). Lastly, the final section offers a wider reflection on user needs and resource design based on the study's results.

1.1. Terminology and terminological resource development in French Sign Language

(Lexicalised) terminology in French Sign Language (LSF) remains rather underdeveloped [1], as reflected in the limited number of publicly available terminological resources (around fifteen in 2026). While interpreters were already highlighting the lack of specialised resources for LSF in the early 2000s [2, 3], the development of digital tools enabled the gradual emergence of online repositories from the 2000s onward, with acceleration in the 2020s (e.g. *STIM Sourds France*, henceforth *STIM*) [4].

This situation can largely be explained by the historical banning of sign language in education following the 1880 Milan Congress [5], which long restricted deaf students' access to higher education and specialised discourse. As a result, opportunities for terminological development and neology have remained limited [6]. Since 2005,[1] however, LSF has been officially recognised as a language in France, contributing to increased educational access.

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[1] See the "Loi n° 2005-102 du 11 février 2005 pour l'égalité des droits et des chances, la participation et la citoyenneté des personnes handicapées", URL: https://www.legifrance.gouv.fr/loda/id/JORFTEXT000000809647. Consulted on 19/01/26.

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The growing presence of deaf students in higher education has now led to increasing needs for specialised signs, both in France [7] and internationally [8, 9, 10]. Terminology creation in LSF occurs in both ad-hoc [11] and planned contexts [6]. In educational settings, interpreters and instructors often coin signs spontaneously (referred to as *codes communs* for LSF), which tend to remain ephemeral. More recently, however, systematic approaches have emerged through workshops organised by students, professionals or educators, leading to the creation and dissemination of recorded signs in online resources (e.g. *STIM* or *Sign'Maths*; see [12, 7, 13]). Such workshops can also be formally organised by interpreters and deaf recipients; the results are then stored in in-house resources [14]. While the issue of developing and possibly standardising specialised signs was identified as early as 1977 for ASL [15], it has gained momentum worldwide more recently, as illustrated by international initiatives such as the 2023 "Global Year of STEM Sign Language Lexicons".[2]

1.2. Terminology and sign languages: an emerging field of investigation

Research on terminology in sign languages remains limited [12]. Existing studies cover a small number of sign languages (e.g. BSL [10, 16, 17, 18], ASL [19, 20], NZSL [21, 22], AUSLAN [23, 24], NTS [8, 25], Libras [26]) and are generally conducted from perspectives such as education, lexicography or translation studies rather than terminology as a discipline [12].[3]

In the case of LSF, apart from our own research and very recent studies led by Italian scholars [27, 28, 29], only a handful of studies explicitly address terminology [2, 3, 30, 1, 31, 32, 13, 33, 7, 34]. The latter reveal several recurring issues: *i)* the lack of established terminology (both in LSF and French) to refer to terminological concepts specific to LSF,[4] *ii)* the predominance of research on educational contexts (and not on professional ones), *iii)* a focus on the strategies used by interpreters to deal with terminology, and *iv)* a limited focus on the terminological resources themselves. Except for our own research [6, 12, 14, 35, 36, 37, 38, 39] and that of Valentini [27] and Vezzani [28, 29], the (few) existing studies do not address the topic through the lens of terminology as a scientific field.

Studies that specifically address resources either consist of a description of the repositories by the compilers (see [31] for civil engineering, [33] for sustainable development and [13] for mathematics), an analysis of the methodology used to compile the resource (see [14] for the compiling of an in-house resource in the field of architecture), a comparison of available tools through the characterisation of the covered fields, the aim of the resource, the profile of the target users, the compiling and distribution process and the resource sustainability (Segouat and Josselin-Leray [35, 6] provide a comparison of 11 online resources), or the issue of terminological variation [36]. More recently, Valentini's master's thesis [27] includes a detailed literature review focused on neology for sign languages, and offers recommendations for the creation of multimodal terminological entries in bilingual resources. The issue of multimodality and the modelling of resources has also been researched by Vezzani [28, 29].

However, user-oriented research for terminology – and lexicography – remains scarce, both for LSF and other sign languages, with only limited exploratory work conducted so far [37]. The only major study is that of Vale [40] for New Zealand Sign Language, which was used as a basis for the empirical study at the core of this paper. The survey presented in Josselin-Leray and Segouat [37] targeted both compilers and users of online lexicographical resources in LSF and aimed at collecting an initial set of data regarding the actual use of existing resources (motivations for using the resource, level of satisfaction, etc.), as well as suggestions for improvement. Josselin-Leray and Segouat [38] discussed the preliminary findings of a questionnaire which aimed at surveying French interpreters and (deaf) translators about (1) their actual use of the available online terminological resources in LSF, (2) the nature of the resources they used, and (3) how they viewed terminology creation in LSF (current trends and prospects for the future).

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[2] Initiated by Gallaudet University in the United States (URL: https://gallaudet.edu/science-technology-accessibility-mathematics-public-health/stem-sign-language-lexicon-workshop/. Consulted on 19/01/26), this series of workshops gathered founders and leaders of STEM Sign Language projects around the world, as well as linguists and STEM deaf educators, and culminated in a summit in March 2024 in Washington DC. Most participants there agreed that, overall, the compiling of specialised STEM repositories for sign languages had gathered momentum from 2010 on.

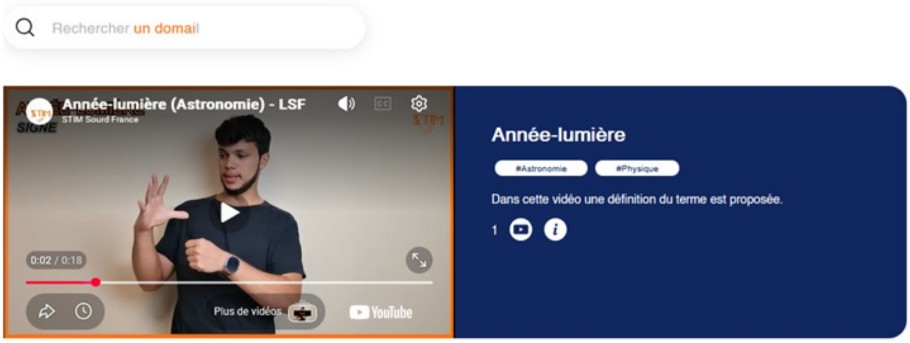
[3] Only Napier [24] and McKee and Vale's studies [22] adopt a point of view rather similar to terminological concerns: that of language planning [24, 22] or that of neology [21, 22].

[4] E.g. there is no given term in French to refer to the equivalent of a term in LSF. Authors have used both *signe-terme* and *signe spécialisé*.

1.3. “Terminological resources” for LSF: definition and main features

In this paper, *terminological resource* refers to any digital repository containing specialised signs in at least one given field. As mentioned above (Section 1.2), terminology has not been the main focus of the few existing studies and this translates into a lack of terms for concepts long defined in terminology for spoken languages. For example, the term *term bank*, commonly used for spoken languages, has no equivalent for sign languages. The term *signaire*, which was coined after *dictionnaire*, can sometimes be found [13], but it can refer to either lexicographical or terminological resources, and there seems to be no clear-cut distinction between general-purpose resources (such as *Elix*) and strictly specialised resources (such as *STIM*),[5] even for the compilers themselves (see findings of Josselin-Leray and Segouat [37, 38]). As a consequence, we found that the umbrella term *terminological resource* encompassed most of the existing repositories. Finally, terminological resources include the ones that are publicly available online (such as *Spreadthesign*), but also the in-house resources compiled within interpreting or translating agencies [6].

As shown in Segouat and Josselin-Leray [6], existing resources cover a limited range of fields (the most represented field being mathematics, with a coverage of 674 signs as of 2022), follow heterogeneous compiling methodologies, and are often opaque regarding their compiling process, with compilers frequently lacking a terminological/lexicographical background. They are rarely designed specifically for translators or interpreters, and their sustainability is frequently uncertain, as most of them are managed by entities, such as associations or schools for deaf students, whose funding is uncertain. There is no unique, large resource that encompasses a large variety of fields and would benefit from substantial funding and academic expertise, as is the case for the British Sign Language Glossary[6], for instance. While formats may vary significantly, all resources include at least a visual representation of the sign (video or drawing) and a corresponding French term, as can been seen in Figures 1 and 2.



Dans cette vidéo une définition du terme est proposée.

Figure 1: Entry for *Année-lumière* (light year) in *STIM*

Figure 1, taken from *STIM*, shows a video of the sign for the French term *année-lumière* (light year), which also includes a definition in LSF. Figure 2, taken from *Les mains dans les étoiles*, shows a drawing explaining how to make the sign, a metalinguistic comment about its use, related words and a very detailed explanation in French for the concept.

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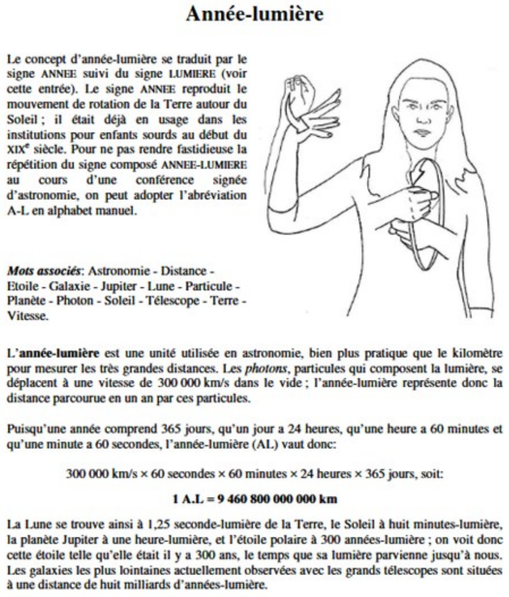
[5] For instance, *Elix* includes mainly general purpose signs, but also highly specialised signs created through occasional partnerships, like the one formed with the *Ligue de Protection des Oiseaux* (LPO - Birds Protection League), where signs for bird names were created.

[6] See the BSL Glossary website: https://www.ssc.education.ed.ac.uk/BSL/#top. Consulted on 26/04/2026.



Année-lumière

Le concept d'année-lumière se traduit par le signe ANNEE suivi du signe LUMIERE (voir cette entrée). Le signe ANNEE reproduit le mouvement de rotation de la Terre autour du Soleil ; il était déjà en usage dans les institutions pour enfants sourds au début du XIX^e^ siècle. Pour ne pas rendre fastidieuse la répétition du signe composé ANNEE-LUMIERE au cours d'une conférence signée d'astronomie, on peut adopter l'abréviation A-L en alphabet manuel.

Mots associés: Astronomie - Distance - Etoile - Galaxie - Jupiter - Lune - Particule - Planète - Photon - Soleil - Télescope - Terre - Vitesse.

L'**année-lumière** est une unité utilisée en astronomie, bien plus pratique que le kilomètre pour mesurer les très grandes distances. Les *photons*, particules qui composent la lumière, se déplacent à une vitesse de 300 000 km/s dans le vide ; l'année-lumière représente donc la distance parcourue en un an par ces particules.

Puisqu'une année comprend 365 jours, qu'un jour a 24 heures, qu'une heure a 60 minutes et qu'une minute a 60 secondes, l'année-lumière (AL) vaut donc:

300 000 km/s × 60 secondes × 60 minutes × 24 heures × 365 jours, soit:

1 A.L = 9 460 800 000 000 km

La Lune se trouve ainsi à 1,25 seconde-lumière de la Terre, le Soleil à huit minutes-lumière, la planète Jupiter à une heure-lumière, et l'étoile polaire à 300 années-lumière ; on voit donc cette étoile telle qu'elle était il y a 300 ans, le temps que sa lumière parvienne jusqu'à nous. Les galaxies les plus lointaines actuellement observées avec les grands télescopes sont situées à une distance de huit milliards d'années-lumière.

Figure 2: Entry for *Année-lumière* (light year) in *Les mains dans les étoiles*

Despite the growing number of resources (Section 1.1), little is known about their actual use. Apart from the preliminary studies mentioned in Section 1.2, no empirical research has focused on their use and usability, particularly from the perspective of professional interpreters. This is why a study addressing this question was conducted over the span of a year (from September 2023 to September 2024) within the framework of a master's degree thesis. The design, methodology and results of this exploratory study are presented and discussed in the following sections.

2. Research questions and methodology

As part of our research, we have tried to provide answers to the following questions:

- What are the motivations behind the use of terminological resources?
- How are the resources actually used? What kind of information do users search for, when and how?
- Are the users satisfied with the resources (usability, overall search results, etc.)?
- And, as a final question, which needs are yet to be met by these resources, according to the users themselves?

For this exploratory study on the interpreters' relationship to online terminological resources in LSF, we adopted a quantitative method in the form of a survey, in order to attempt to gather significant data from different regions of France, with as many different profiles as possible (interpreting agency employees and freelance interpreters, working in small teams, bigger teams or alone).

The survey presented the respondents with 11 freely accessible online resources, ranging from word lists to specialised dictionaries.[7] The questionnaire was designed with LimeSurvey. The survey was written in French, aiming to reach professional interpreters actively working in France. It took an estimated 35 minutes to complete and was composed of 11 groups of questions,[8] coming to a grand total of 46 questions.

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[7] The complete list of resources presented in the survey is available in Appendix A.

[8] The groups of questions were as follows: (1) Participants' profiles, (2) Knowledge about the resources, (3) Resource use, (4) Resource creation, (5) Ergonomics, (6) Users' satisfaction regarding the resources, (7) In-house resources, (8) In-house resource creation, (9) In-house resources for freelance interpreters, (10) Users' satisfaction regarding in-house resources, (11) The ideal resource.

This survey was tested through a pilot study by two interpreters working for the interpreting agency Interpretis in Toulouse, France. Their feedback was taken into account and led to changes in the layout of some questions. At the end of May 2024, the survey was sent via email to 42 interpreting agencies and freelancers. Their contacts were gathered through the AFTILS (French Association for Sign Language Translators and Interpreters) website.[9] The survey was also sent out to the members of a Discord server that brings together professional interpreters and students around various professional issues. Lastly, the employees of the interpreting agency Interpretis also received the survey on their professional email account.

3. Results of the exploratory study

This section focuses on the results gathered in this first study by highlighting significant data regarding the respondents' profiles, their motivations when consulting resources, their reported use of said resources, as well as their satisfaction.

3.1. Profiles of the respondents

The respondents have between two and 30 years of experience as professional interpreters, with a large proportion (32%) belonging to the category "two to five years of experience". This "over-representation" could be attributed to the fact that freshly graduated interpreters might be more inclined to answer surveys made by students because they were in the same situation a few years prior. We can also infer that these individuals, who are just entering the professional world of interpreting, are using online resources to help their practice, enrich their vocabulary and compensate for their lack of experience.

More than 71% of the respondents work in an interpreting agency, two interpreters work in an educational structure and one in a health and social care setting. Five of the respondents work as freelance interpreters. When working as part of an interpreting agency, a large proportion (46%) is part of a small to medium team (hiring between two and 10 interpreters), while more than 35% work in a large team of 25 to 33 interpreters.

3.2. Motivations behind the use of resources

Our first set of results relates to the interpreters' motivations behind the use of terminological resources. Our survey listed six propositions and included a comments box to add any other motivation the respondents wanted to mention. Multiple answers were allowed.

3.2.1. Main uses of bilingual resources

The number one motivation behind the use of resources, as shown in Figure 3, was the need to find a sign that would be an equivalent to a "specialised word" (a term)[10] in French, i.e., linguistic equivalence. This could be influenced by the fact that the documentation used to prepare assignments is usually in written French (emails, presentations, speeches, etc.). Moreover, sign language interpreters being, for the most part, native French speakers (only a small proportion of interpreters have LSF as their first language) [41], they might apprehend concepts intuitively with the French language first, and then translate this concept into sign language.

The practice of sign language interpreting happens in a diglossic environment, meaning that there are more translation needs from French into LSF than from LSF into French, especially when it comes to conference interpreting (highly technical or terminology-heavy content is often linked to the conference interpreting format, including in an educational context such as secondary or higher-level education). This can explain why searching for terms from the spoken language only is considered to be enough, since cases where an unknown (technical) sign (when LSF is the source language) needs to be translated into French are rare.[11] When such cases happen, though, looking up a sign in order to obtain a French translation is almost never an option in current online resources [37]; only one of the resources (*Sématos*) provides a search option with the handshape of the first letter of the word in LSF but the search itself still depends on the French word. In second position, respondents turned to the resources to find an alternative sign to one that did not feel adequate to them. The resources were also a way to confirm a sign they already know.

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[9] AFTILS website: https://aftils.fr/. Consulted on 08/12/25.

[10] The choice to use "specialised word" rather than "term" in the survey is explained in part 4.1.5.

For 16 of the respondents, looking up signs served as a base to create codes with the recipient of the service. These temporary codes (*codes communs*, as specified in Section 1.1), specific to sign language interpreting, can be understood as a convention between the interpreter and the deaf recipient to refer to concepts which do not yet have (to the best of the interpreter's and the recipient's knowledge) an equivalent in sign language.

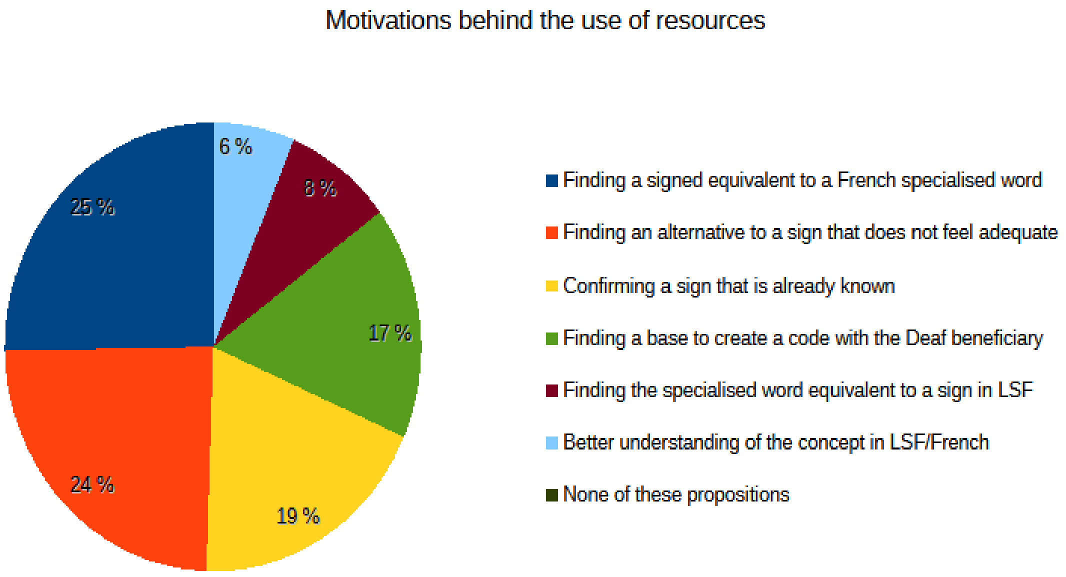

Figure 3: Motivations behind the use of resources

This strategy is an alternative to finger-spelling the French word or term, which takes time and is not always successful, by creating a temporary sign. These temporary codes can later give way to a more in-depth reflection around the denomination of the concept in LSF by deaf users [41, 3].

Three interpreters mentioned that the recipient's feedback influences their own use of technical signs. For example, if, during the preparation phase of the assignment, the interpreter finds a sign via an online resource, they will use it in front of the recipient and, according to their feedback, decide to use it or not going forward. This shows that the main goal of the interpreters is to make sure that they are understandable for both parties, and that adjustments are made during the actual assignment.

Lastly, only six respondents selected the option "Better understanding of the concept in LSF/French", suggesting that bilingual online resources are not the preferred tool to better understand concepts, which can be explained by the inherent structure of said resources. Indeed, for the most part, they are mere word lists, where definitions are concise and sources are rarely accessible [37]. As such, they are not sufficient to grasp the subtleties of a specialised concept.

Reported motivations behind searching for a term in a resource were not limited to preparation or performance during an assignment; they also extended to terminological monitoring. As some of the comments for this question show, the interpreters use resources to keep track of the evolution of signs and neologisms (for three of our 28 respondents). Some interpreters (five out of 28) mentioned using the resources to learn new signs and enrich their vocabulary in LSF. Lastly, two of the respondents said they used resources to find regional variations of signs, diatopic variation being a well-known feature of LSF [37].

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[11] When deaf people do have access to qualified positions, they often are the only deaf person in an otherwise speaking environment. Without colleagues with whom they can talk about specialised concepts in LSF, there is little to no room for spontaneous neology to occur.

3.2.2. The role of social media and corpora

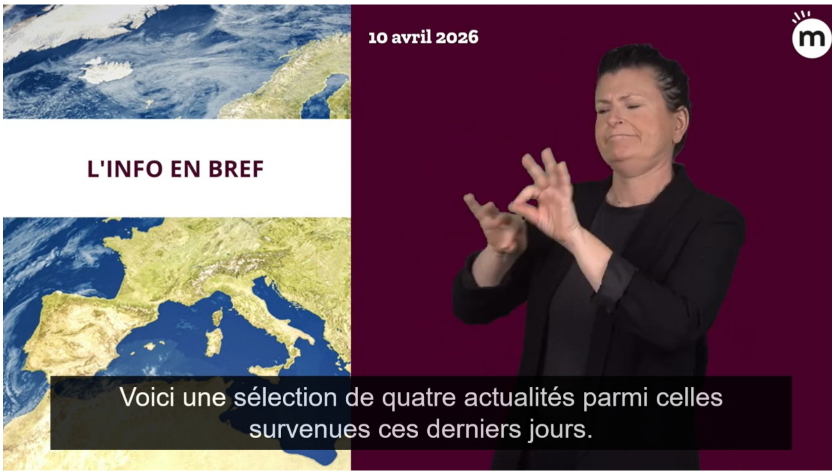
This preliminary study focused on 11 resources freely accessible online, a sample of the most well-structured tools among the wide array of LSF resources available today on the Internet. This survey provided us with another crucial piece of information regarding the search behaviour among interpreters: the reliance on monolingual and bilingual corpora.

Our survey included "Social media" as a clickable option, which was selected by almost a third of our respondents when asked which resource they used the most frequently. Their comments gave us insight into which social media accounts or pages were considered as resources, and this allowed us to identify two different categories.

On the one hand, accounts or group chats dedicated to peer discussions about terminology: WhatsApp groups, Facebook pages or Discord servers where interpreters and translators can ask questions about a particular term or concept, much like an online forum.

On the other hand, some accounts are dedicated to a particular theme and provide videos in LSF discussing concepts and related signs. These accounts are deaf-owned and provide context for the signs presented, giving a mix between definitions and explanations about the signs' motivations. The videos are not always captioned, which places them in-between monolingual and bilingual collections of video texts.

When asked which other resources they were using, four respondents also mentioned *Médiapi*,[12] an online news website in LSF which provides a French translation of every article beneath the original video. One respondent mentioned they used *Médiapi* to see signs used in the context of a sentence. Figures 4 and 5 show an example of a video on the *Médiapi* website as well as the French translation of the video's content, typically found underneath the video.



Voici une sélection de quatre actualités parmi celles survenues ces derniers jours.

Figure 4: Example of a news video from *Médiapi*

Viewers can enter a term in the search bar to find it in the translated text of an article and find the exact moment in the video when the term is used thanks to the subtitles. The use of this searchable bilingual collection indicates an interest in seeing specialised signs being used in the context of a sentence. The internal organisation of the corpus allows interpreters to identify whether the context found in the video corresponds to the field of the searched term, given that the website is organised in different topics.

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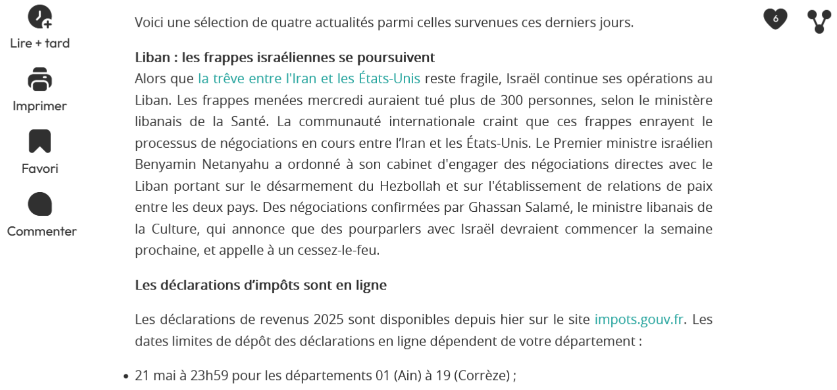
[12] *Médiapi* website: https://www.media-pi.fr/. Consulted on 08/12/2025.



Voici une sélection de quatre actualités parmi celles survenues ces derniers jours.

Liban : les frappes israéliennes se poursuivent

Alors que la trêve entre l'Iran et les États-Unis reste fragile, Israël continue ses opérations au Liban. Les frappes menées mercredi auraient tué plus de 300 personnes, selon le ministère libanais de la Santé. La communauté internationale craint que ces frappes enrayent le processus de négociations en cours entre l'Iran et les États-Unis. Le Premier ministre israélien Benyamin Netanyahu a ordonné à son cabinet d'engager des négociations directes avec le Liban portant sur le désarmement du Hezbollah et sur l'établissement de relations de paix entre les deux pays. Des négociations confirmées par Ghassan Salamé, le ministre libanais de la Culture, qui annonce que des pourparlers avec Israël devraient commencer la semaine prochaine, et appelle à un cessez-le-feu.

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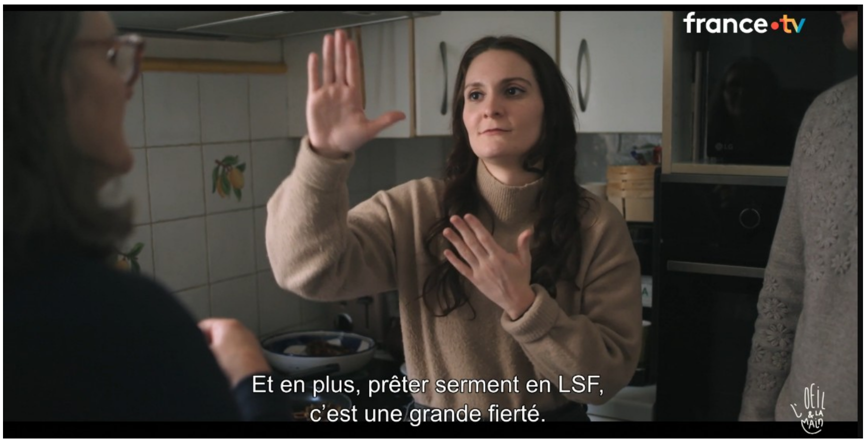
Les déclarations de revenus 2025 sont disponibles depuis hier sur le site impots.gouv.fr. Les dates limites de dépôt des déclarations en ligne dépendent de votre département :

- 21 mai à 23h59 pour les départements 01 (Ain) à 19 (Corrèze) ;

Figure 5: Example of the translation of a news video from *Médiapi*

The same goes for the French TV broadcast *L'œil et la main*,[13] a collection of documentaries in LSF and subtitled in French where each episode is dedicated to a topic linked to the deaf community in France (mentioned as a resource by one respondent). Figure 6 below shows a screen capture of an episode of *L'œil et la main*.



Et en plus, prêter serment en LSF,
c'est une grande fierté.

Figure 6: Example of an episode of *L'œil et la main*

3.2.3. The case of in-house resources

The survey included a part dedicated to in-house resources (see Section 1.1). This type of resource is created by an interpreting agency or an organisation that employs interpreters, and is not accessible to people outside of the organisation, including other interpreting agencies (unlike glossaries in spoken languages which can be shared between translation agencies or directly reused by clients[14]). According to the responses, 69% of the interpreters working as part of a team (whether in an interpreting service or in a health and social care or educational organisation) have access to an in-house resource.

For the most part, these resources are a set of files gathered on a local server or a cloud storage solution. Some of the interpreters also mentioned having a searchable database with a dedicated software, a web platform or a YouTube channel.

Interestingly, all three motivations were selected by 12 of the 16 respondents, showing that an in-house resource can fulfil several goals: a sharing platform to harmonise temporary codes developed during assignments within the team, a repository of local signs (clients, toponyms, organisations), as well as a place to store the signs created during thematic terminology workshops.

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[13] Available on France TV's website: https://www.france.tv/france-5/l-oeil-et-la-main/. Consulted on 08/12/2025.

[14] One of the main reasons why these repositories are rarely shared outside the interpreting agency where they were created has to do with personal data protection: LSF videos cannot (yet) be anonymised without hindering readability and comprehension (which defeats the purpose of the video itself), making the circulation of the resources a potential risk of personal data leaks.

One comment stood out; when asked about the organisation of the in-house resource, the respondent said their “Drive” (cloud storage solution) was organised thematically [39], bringing up the question of the preferred or most intuitive search mode for interpreters when browsing resources.

3.3. Actual use of the resources

The actual use of the resources as reported by respondents was evaluated through several questions, which aimed at defining how many resources were known by the participants, the moment and the way they used them, as well as their perceived user-friendliness.

3.3.1. Knowledge of existing resources

Our results showed that while none of the 28 respondents knew *all* of the 11 resources presented to them they knew *between six and seven* online resources on average. We took three parameters into account to know which resources interpreters already knew and which they used the most: *i)* the respondents know the presented resources exist, *ii)* they have used the presented resources at least once, *iii)* they frequently use these resources.

Among the 11 resources we presented to the respondents (apart from the “Social media” and “Other” categories), the most well-known were *Elix* and *STIM* (known by 100% of the respondents), followed by *Sourds.net* (24), *Sématos* (21), *Spreadthesign* and *Sign’Maths* (20). Social media platforms appear in third position in ranking (21). By cross-checking this data with that of question 8, we discovered a slight difference between “knowing about” a resource and using it. *Elix* stays in first position and is by far the most used (for question 9, 18 respondents said they use it “very often”), corroborating the results of a previous study [37]. *STIM* still comes in second place and is said to be used “very often” by nine out of 28 respondents. Social media platforms are the third source of terminology and lexicon used by the respondents: eight out of 28 said they use them very often.

As explained in Section 1.3 of this article, *Elix* is a general-purpose language resource with some more specialised signs stemming from occasional partnerships with specialised associations or trades [37]. *STIM*, however, is a terminological resource dedicated to sciences such as chemistry, physics and numerous others. *Sign’Maths* is dedicated specifically to mathematical concepts and aimed at teachers and educators in the field of mathematics.

With this context in mind, it is easy to understand that resources are not used in the same way and with the same frequency. Depending on the interpreter’s assignment, the resource might not be adequate.

Through the comments boxes, other resources known by interpreters (such as social media channels and websites) were brought to our attention, proving that terminological collection and creation initiatives are well and growing. However, the multiplicity of resources makes it difficult to draw an accurate map of what exists. One respondent left a comment about not knowing where to find resources and regretted not having access to a single-entry gateway to every existing resource for LSF.

3.3.2. Moment of use

One of our hypotheses when conducting this study was that sign language interpreters use online resources to get prepared before an assignment and use it during an assignment when they do not remember a term or when new terms, that the interpreter did not anticipate, need to be interpreted, as theorised by Gile [42] in the case of spoken language interpreters. Because of a technical difficulty with the survey, we were not able to cross-examine the resources used with the moment of look-up. This makes it difficult to know whether the same resource could be used before, during and after an interpretation assignment. However, since three of the respondents took the time to inform us of this defect in a comments box, it is safe to assume that they do use the same resource at different times.

In the great majority of cases, the resources presented to respondents are used before an assignment. The two resources that have been mentioned as being used both before and during an assignment (specifically during "passive relays"[15]) are *Elix* and *STIM*, both of which have a smartphone-friendly user interface. The moment of look-up must be cross-checked with the ergonomics of the resources, and it seems reasonable to infer that if the website is difficult to navigate on a mobile device, interpreters will not rely on it when they are on-the-go.

3.3.3. User-friendliness

We questioned the impact of the resources' ergonomics (or user-friendliness) on their actual use by interpreters. Interpreters work in fast-paced environments where preparation, when available, can only cover a part of what will actually be said (and interpreted) during the assignment [42]. The tools interpreters rely on must therefore be time-efficient and easy to use.

The answers to questions 17 and 17bis show that interpreters use mobile phones as well as computers to look up terms in a resource (only four of the respondents declared exclusively using their computer to access resources, compared with 14 respondents using both their phone and their computer) and this mode of consultation changes according to the moment of look-up and the user's objective.

For example, the respondents tend to prefer a computer when preparing an assignment. The motivations behind the use of a computer are ease of use (bigger screen than on a phone, possibility of having multiple tabs open at the same time) and rapidity (they can easily switch between tabs and usually have a better Internet connection). One of the respondents mentioned that some websites are not compatible with mobile-phone browsing.

During a passive relay, or while travelling, the mobile phone is favoured to look-up resources on the go: practical, it is always within reach.

For the majority of respondents, a website or an app is preferable to multiple files gathered on a local server and only accessible via a computer (question 16). However, no preference was expressed between a website or a mobile app (both answers received the same percentage of votes: 68%). The ergonomic criteria with the most influence on resource use are: easy access to information (for 25 out of 28 respondents), the option to look up terms from written French (24/28), thematic organisation of signs within the resource (20/28) and fast-loading pages (18/28). Having access to a mobile version of the resource is also a determining criterion for half of the respondents.

In-house resources are used in the same ways that online ones are: interpreters look up signs related to a specific local context before an assignment, often to check names and toponyms, and can use them during a passive relay (if the platform is accessible and usable on a mobile phone). These resources are also enriched after assignments when codes are being created on site, as a way of gathering and sharing information with the team.

3.4. User satisfaction and needs

The last part of our survey touched on users' satisfaction with the resources. This was evaluated via questions about ergonomics and linguistic information.

3.4.1. Overall satisfaction

As a reminder, the selected online resources only represent a part of the existing resources, specifically websites that are freely accessible online, some of which have a mobile-friendly version. By asking the question “Generally speaking, are you satisfied with online resources?”, it is difficult to know if the respondents only considered the 11 resources that were presented to them, or if they included online corpora and social media, or even resources that they know and were not quoted in this survey. Moreover, given the phrasing of the question, we unfortunately cannot gather information on the satisfaction of interpreters regarding each resource.

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[15] When working in a pair, interpreters take turns every 15 to 20 minutes in order to recover from the taxing cognitive effort provided during simultaneous interpretation [42]. The interpreter who is not actively interpreting often sits in front of their colleague to provide support if necessary. This is a time when the interpreter can look-up terms on their phone for example.

Our hypothesis was inspired by the paper by Pastor and Alcina [43] regarding spoken languages, where the authors found that interpreters and translators were not satisfied with online dictionaries because of the lack of context provided for the proposed words and terms. Examples and terms shown in context are a precious source of information for translators [44]. According to Pastor and Alcina [43], this lack of contextualisation pushes the professionals to turn to electronic corpora or towards Internet searches to see the words or terms used in context.

Interestingly, most of the interpreters who participated in the study (53.57%) said they were satisfied with online resources (which is in keeping with the overall findings of Josselin-Leray and Segouat [37]): they fulfil their expectations, the signs are correct and correspond to the wanted field, video quality is satisfactory, the loading time is fast and accessing information is intuitive enough.

This overall satisfaction might be linked to the motivations behind the terms search: if bilingual online resources are used as a quick way to verify or learn a sign before or during an assignment, the most used resources (*Elix* and *STIM*) are able to fulfil this role. However, as we mentioned earlier in Section 3.2.1, when interpreters are looking to better understand a concept, bilingual resources are not the preferred source of information.

3.4.2. Identified needs

The reasons for dissatisfaction with the bilingual resources are also helpful in understanding the needs of interpreters.

As mentioned in Section 3.3.1, two respondents reported that there is not enough communication around the resources and that they are hard to find.

Four respondents thought that resources are not developed enough, and that a lot of signs are missing, especially those linked to a regional context (e.g. toponyms such as the names of cities and regions).

As mentioned in Section 1.3 of this article, for most of the terminological resources presented in this work, resources stay opaque about the composition of their team. The creation process and methodology are also rarely explained and unsatisfied respondents mentioned four times the lack of information regarding the creation process as a cause for dissatisfaction.

We tried to identify the aspects of a resource that would inspire trust to the users with questions 20 to 22 [39].

Results show that the specialised sign was considered as an important piece of information for more than 85% of the respondents, when only half considered the French term as important. This is in contrast with the results for question 18 where the research option from written French was mentioned by 24 out of 28 respondents as something that would positively influence the use of a resource.

In second position (68%), the source of the sign was deemed important by respondents. Again, as the phrasing of the survey question was imprecise, it is hard to say if interpreters want to know who created the sign (information about creation methodology and the people involved in the process) or if they are asking for a justification for the denomination (why was this sign chosen for this concept). However, since the answer option “Etymology of the sign” was only voted 12 times, we can assume that interpreters are more interested in the creation process and methodology.

The third and fourth most voted answers for question 21 caught our interest: interpreters voted for “A definition in LSF” (64%), as well as “Examples in context” (60%). This shows that while it is rarely their first concern, contextualisation of signs is still important to interpreters, as it has been theorised for the contextualisation of words or terms for translation in spoken languages [44, 45].

4. Limits of the exploratory study

This study was created as a first step towards a larger scale project. As such, it contains limitations that will be addressed in this section.

This exploratory work should be taken further with qualitative interviews to ensure a controlled environment, similar for every participant. This would prevent “cheating” behaviours among the respondents (by going online to check different resources they did not know about, for example) [46]. The estimated time recorded to answer the survey (35 minutes) might also have discouraged participants.

4.1. Sample representativeness

We had to lower our objectives for the quantitative study due to the number of respondents: 44 responses were received, of which only 28 were complete and usable. These 28 responses represent 4.5% of the estimated population of interpreters currently working in France (615 interpreters were registered in 2023 by the AFTILS).[16] In order to have a representative study, we would ideally have had to collect a minimum of 200 responses to this survey [47].

Not all of the French interpreting agencies are represented in this study. A strong proportion of respondents work in the southern part of France, which can be explained by the fact that this study was conducted as part of a master’s degree thesis at the University of Toulouse II Jean-Jaurès, France. The personal network of the authors was called upon to participate in the survey; it included the team of interpreters from Interpretis, the interpreting agency which partnered with the university for a work-study program, as well as different interpreters met through internships who, for the most part, also work in the south of France.

4.2. Technical difficulties

While using LimeSurvey, we experienced some limitations and had to rethink how some questions were configured to guarantee that the respondents were able to give multiple answers to one question. Despite testing the survey beforehand through the pilot study, this issue was mentioned to us three times by respondents through the comments box of a question, leading to the inability to gather the expected data.

4.3. Bias

As already stated in Section 1.3, this master’s degree project was conducted during a one-year work-study program. Interpretis, the company hiring one of the authors at the time, helped relay the call for participation among the company’s employees. This means that the interpreters that were targeted to answer the survey also were, for the most part, colleagues. This creates different biases that need to be kept in mind.

The first is one of power dynamics between the respondents and the company’s management; some of the respondents may have hesitated to participate in the survey, by fear of giving away a bad image of the company they work for or to give information regarding their practice which their employer should not have access to in regular circumstances [48, 49]. To circumvent this bias, the survey was made entirely anonymous and participation was voluntary.

The second bias is the fact that, being both an interpreter and a researcher, the first author is studying the social group that she is a part of. This can influence the research in different ways, namely with the risk of a confirmation bias, where the researcher can give more attention to data confirming their hypothesis (which, in this case, come from field observations and hands-on experience) than to the data going against them [50], or the risk of the echo chamber effect, where the researcher is only exposed to content from people who seems to be of the same opinion as them, which in turn makes them believe they must be right[17]. We are hoping to counterbalance this echo chamber effect by expanding the user groups to other user profiles (deaf professionals and translators) as part of our future project.

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[16] See “Recensement des interprètes français – LSF diplômé·es / qualifié·es en France” - https://aftils.fr/media/pages/nos-publications/recensement-aftils/77f0683a96-1714835910/statistiques-recensement-ils-2023-29-avril-2024.pdf (2024). Consulted on 03/07/24.

The social desirability bias also needs to be kept in mind as it can lead respondents to give the answer they believe is expected by the interviewer in order to appear "normal" [47] or to correspond to the image they have of the company that hires them.

For example, it is possible that the respondents slightly exaggerated the number of resources they actually know or use for question 7. However, this study is a first step towards an overview of the resource usage in France, which can later be expanded through qualitative interviews, among other experiments.

4.4. Choice of terms and ambiguity

The deliberate use of broad terms led the respondents to misunderstand some questions, which did not allow precise data collection.

The term *resource* was chosen to indicate an object that is not strictly a dictionary (as mentioned in Section 1.3). To clarify, the following text was added at the beginning of the survey:

> "In the next section of this survey, I am using the designation "online resource" to refer to a collection of signs that is accessible on the Internet (glossary, sign repository, etc.) and "specialised word" to designate a French word from a specific field (e.g. archaeology, masonry, botany, etc.)"[18] [39].

Similarly, *specialised word* and *specialised sign* were used rather than *term* and *term-sign*, to remove the confusion that could arise from using specialist vocabulary. The terms *ergonomics* and *format* were also used several times to refer to the user interface of LSF resources and their user-friendliness. These terms, albeit technically incorrect, seemed to be more easily understandable by the general public and were used to prevent misunderstandings.

5. Perspectives: context, multimodality and user-specific needs

Despite some limitations, the results of the study show that several needs are yet to be met in current resources used by LSF interpreters. The shortcomings identified by language professionals inform us about linguistic needs and habits of use, which will be explored further as part of a Ph.D. project.

Firstly, the need for centralised resources has been identified: the signing community in France has to rely on associations and volunteer-based projects for terminology collection and creation (see Section 1.3), resulting in many different (and not always equal) options to choose from. Despite efforts from some associations to list other initiatives, to this day there is no truly seamless website that collates all of the existing online LSF resources. In this regard, inspiration could be taken from international projects, such as the work conducted by Atomic Hands in the USA. The deaf-led association is developing an online platform called Tachyo, which will work as a single access point to every STEM-related online resource available in ASL [51].

The need for transparency regarding the configuration and methodology of resource teams is also an important criterion in the trust granted by professional users to resources. As mentioned in Section 1.3, lexicographers and terminologists are rarely, if ever, part of the LSF resources creation process. The Tachyo initiative is a good example of an alternative: the association behind the project has recently sent out a call for lexicographers to join the team,[19] setting itself apart by recognising the crucial role of systematic review of term and sign associations by professionals.

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[17] See the definition of *echo chamber* by the online guide to cognitive biases by shortcogs.com: https://www.shortcogs.com/bias/echo-chamber. Consulted on 05/01/26.

[18] Author's translation, original text in French.

[19] Atomic Hands Facebook post, posted on 13/03/2026: https://www.facebook.com/atomichands/photos/tachyo-is-an-aggregated-asl-stem-dictionary-that-brings-together-signs-from-mult/949520914131429/. Consulted on 13/04/2026.

As stated in Section 3.4.1, LSF interpreters seem satisfied with bilingual resources when looking for linguistic equivalence; however, these tools are not their first choice when it comes to better understanding a specific concept. Spoken language dictionaries and term banks usually include definitions to explain the concept linked to a term, while LSF resources rarely do [37]. When definitions are included, they are translated from French into LSF rather than directly created in LSF, and are often based on dictionaries with ill-defined scopes [37]. Other examples can be found internationally: the BSL Glossary integrates definitions crafted directly in BSL by deaf scientists and science educators, which are subsequently translated into English.

LSF interpreters, like spoken language professionals, need useful context to acquire conceptual knowledge and proper term/sign use [44]. Within resources, this context takes two main forms: examples in context and corpora. Seeing the signs used in a sentence helps access linguistic information, which a "neutral form" of the sign, often found in bilingual resources, does not cover (such as the sign's directionality [52]). Being able to search a corpus adds a second advantage: full context and examples extracted from natural expression instead of artificial sentences. Corpora also allow access to more up-to-date examples of sign language in its natural form, crucial for terminology collection, specifically neologisms.[20] Lastly, users can consult the source of the corpus and assess themselves the source's reliability [44].

This exploratory study suggests that interpreters are not too concerned about the medium when looking for information. Even if they do not readily have access to a single, centralised, multidimensional resource, their research strategies are indeed multimodal. When interpreters search for a term on a news broadcast website in LSF, they integrate bilingual (translated) corpora to their search for linguistic equivalence. When looking for a specific machine's schematics on a search engine, they introduce visual media and illustrations into their search for concept understanding. When studying a past conference given by a client, they use monolingual corpora to become familiar with the client's prosody and accentuation. Relying on multiple sources, combined with the vastly different formats leveraged by interpreters, points towards a truly multimodal approach to term search and pre-assignment preparation. Including these strategies into the design and conception phases of resource creation, by "treating modality as an explicit structural dimension" as suggested by Vezzani [29], would help make terminological resources more inclusive, and increase efficiency for users.

More extensive research is needed to confirm the usage behaviour and the needs mentioned in this exploratory study. As part of a PhD project, we plan on conducting interviews and simulations to gather more data about the interpreters' strategies when handling terminology.

The array of users will also be extended to integrate LSF-French translators and deaf professionals working in specialised fields. The results of this study will allow for a comparison of behaviours and bring us a step further towards creating guidelines for bespoke terminological resources in LSF.

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[20] A recent project called LaboSignes [53] is aiming to create a web-based interface for interactive French Sign Language (LSF) recognition, designed to enable search-by-sign for deaf users.

Declaration on Generative AI

The authors have not employed any Generative AI tools.

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A. List of online resources

List of online terminological resources mentioned in the article (last consulted on the 26/04/2026). The resource marked with an asterisk was not included in our survey.

Name of the resource	**Website URL**
Elix	https://dico.elix-lsf.fr/
Glossaire du développement durable en LSF de l’UVED (Université Virtuelle Environnement et Développement Durable)	https://www.irit.fr/GlossaireDD-LSF/index.html
Les doigts qui rêvent – Mots d’archéologie et de zoologie en LSF	https://ldqr.org/?s=LSF
Les mains dans les étoiles – Dictionnaire encyclopédique d’astronomie pour la LSF	http://sion.frm.utn.edu.ar/iau-inclusion/wp-content/uploads/2017/11/Dictionnaire-Frances.pdf
Lexique LSF du Génie Civil – INSA Toulouse*	https://www.youtube.com/playlist?list=PL3XcTwNsCQ0ML61vdNLLPr1p_h7JHfMBv
OCELLES (Observatoire des Concepts et Lexiques en Langues Écrites et Signées)	Website is unavailable
Répertoire lexical français/LSF de l’Institut des jeunes sourds de Bourg-la-Reine	http://ijs.92.dico.free.fr/
Sématos	https://www.sematos.eu/lsf.html
Sign’Maths	https://signmaths.univ-tlse3.fr/?_sft_categories=tous-niveaux
Sourds.net – Dico LSF	https://www.sourds.net/a-z/
Spreadthesign	https://spreadthesign.com/fr.fr/search/
STIM Sourds France	https://www.stimsourdfrance.org/