

D6.1 Publicity and Dissemination Report for Y1, Including Project Website



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Executive Summary

The SL-ReDu project aims to advance the state-of-the-art in the automatic recognition of Greek Sign Language (GSL) from videos, while focusing on the education use-case of standardized teaching of GSL as a second language. In this deliverable (D6.1), we present the dissemination activities during the first year of the project (M1-M12), which primarily included publications and presentations at international conferences, as well as the design of the project logo, a flyer (handout), and a project poster. In addition, we present the project website that has been designed and set up during the first year of the project, and which is hosted at the Department of Electrical and Computer Engineering of the University of Thessaly. The deliverable is part of the first project milestone (MS1 – M12), and it will be updated as D6.2 and D6.4, summarizing the SL-ReDu dissemination activities during the second and third year of the project, respectively.

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1 Introduction

Dissemination represents an important activity of research projects, as it allows spreading of the developed knowledge in a timely fashion to the scientific, stakeholder, and general public communities, while also allowing funding agencies to gauge project impact and investment return, as well as resulting to visibility of all parties involved. The SL-ReDu project constitutes no exception to this rule, having assigned a dedicated task (T6.1) of workpackage WP6 in its Technical Annex to the project dissemination activities. This task remains active over the entire duration of SL-ReDu, with its activities reported yearly, as deliverables D6.1, D6.2, and D6.4, at the end of the first, second, and third year of the project, respectively.

In this deliverable (D6.1), we overview the dissemination activities of the SL-ReDu project during its first year. More specifically, we discuss:

- The design of the project logo (Section 2).
- The design and setup of the SL-ReDu website (Section 3).
- The publications of research work related to SL-ReDu (Section 4).
- The presentations of the project in various fora (Section 5).
- The designed brochure and poster describing the project (Section 6).
- Any other dissemination activities, including student education activities (Section 7).

Finally, in Section 8 we detail some of our planned future dissemination activities, and in Section 9 we conclude the deliverable.

2 The SL-ReDu Logo

To assist dissemination efforts and provide a unified look to project’s dissemination documents, we have designed the SL-ReDu logo, in color. The logo, depicted in Figure 1, consists of a two-handed sign placed next to the project acronym and its full expanded name. The latter is provided in both an English and Greek version to suit dissemination activities at both international and national fora. Note that the particular handshape has been chosen due to the fact that it corresponds to part of the signing for the word “study” (“μελετώ”) in GSL, thus implicitly referring to the use-case of the SL-ReDu project. The logo has been selected by the project among various versions, differing primarily in the handshape, layout, typesetting, and coloring scheme. Three such alternative designs considered are shown in Figure 2.



Figure 1: The SL-ReDu project logo (both English and Greek versions are depicted).



Figure 2: Three alternative designs considered for the SL-ReDu logo, before choosing ones in Figure 1.

3 The SL-ReDu Website

A crucial role in project dissemination can be provided by an up-to-date website, holding information about the project, the work conducted, dissemination activities pursued, etc. For this purpose, we have created a dedicated project website with domain name <https://sl-redu.e-ce.uth.gr>, which is hosted at the Department of Electrical and Computer Engineering at the University of Thessaly, in Volos (UTH-ECE). The home page of the website provides general information about the project, its goals, the partners involved, and its funding source, and it also includes the SL-ReDu logo and a schematic diagram in order to help convey the main goals in the education use-case of the project. The material is provided in both English and Greek, as can be seen in Figure 3, with navigation between them enabled by small clickable flags at the top right of the page.



Figure 3: The SL-ReDu home page in English ([left](#)) and Greek ([right](#)).

Further, the website allows navigation to more dedicated pages through a clickable multi-item header. These pages provide information about:

- The project partners and people involved
- The work-package structure of the project.
- The public deliverables of the project.
- The project scientific publications.
- The project news, primarily concerning presentations in dissemination events.
- Contact information of the project P.I. and website responsible, in case more information is desired concerning the above.

Most of these pages are available in both English and Greek. Some examples (in English) are shown in Figure 4, namely of the page listing the project partners and personnel, the page listing the project published papers (that are downloadable), and the page listing the project dissemination activities, where video presentations of project papers in conferences can be found and downloaded (note that, due to the ongoing pandemic, all such presentations were made online, since all conference events have switched to a virtual format). Note that in all pages the funding agency (Hellenic Foundation for Research and

Innovation – H.F.R.I.) is acknowledged explicitly in text and logo, or by its logo alone. The website material will be frequently updated to reflect the most recent project activities and results.

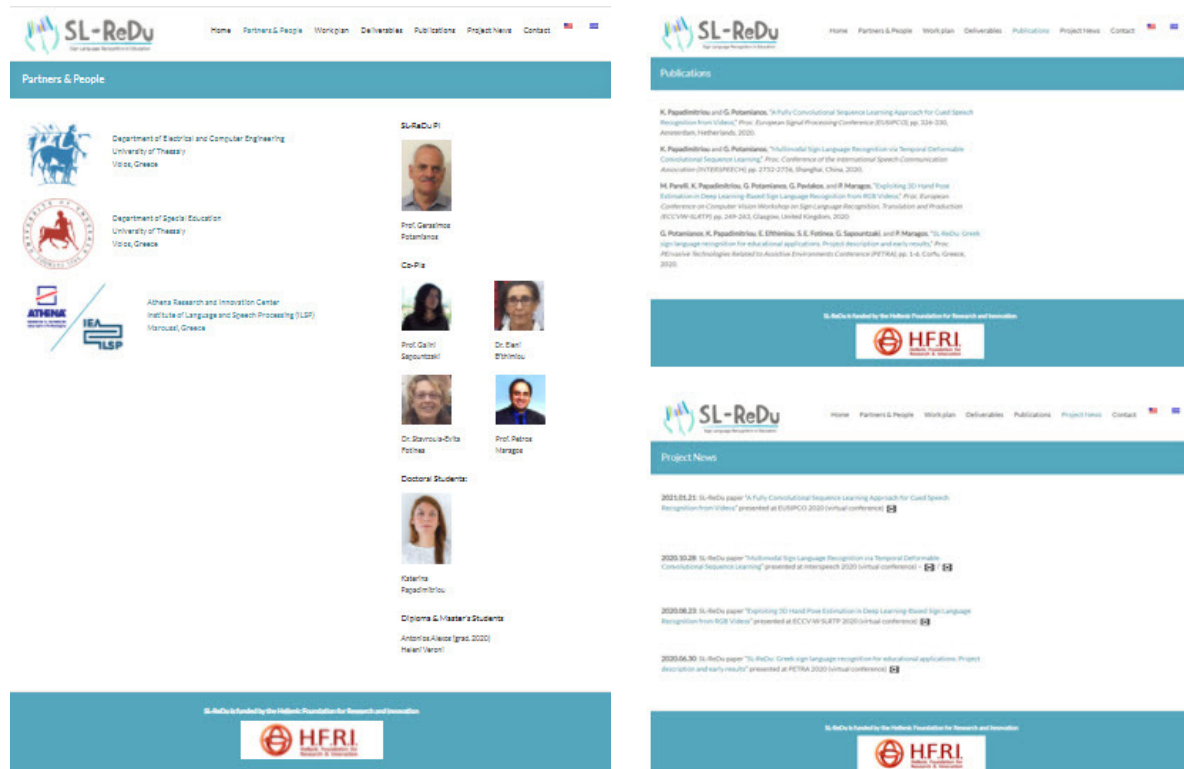


Figure 4: The SL-ReDu web pages concerning project partners and personnel (**left**), project publications (**right, top**), and project video presentations (**right, bottom**). Papers and presentations are downloadable.

4 The SL-ReDu Publications During Y1

During the first 12 months (Y1) of the SL-ReDu project, the following five scientific publications have appeared in well-established international conferences with stringent review procedures:

- K. Papadimitriou and G. Potamianos, “Multimodal sign language recognition via temporal deformable convolutional sequence learning,” in *Proceedings of the Annual Conference of the International Speech Communication Association (Interspeech)*, pp. 2752–2756, 2020 (DOI: 10.21437/Interspeech.2020-2691).
- K. Papadimitriou and G. Potamianos, “A fully convolutional sequence learning approach for cued speech recognition from videos,” in *Proceedings of European Conference on Signal Processing (EUSIPCO)*, pp. 326–330, 2020 (DOI: 10.23919/Eusipco47968.2020.9287365).
- M. Parelli, K. Papadimitriou, G. Potamianos, G. Pavlakos, and P. Maragos, “Exploiting 3D hand pose estimation in deep learning-based sign language recognition from RGB videos,” *Computer Vision – ECCV 2020 Workshops Proceedings, Part II*, A. Bartoli and A. Fusiello (Eds.), pp. 249–263, LNCS/LNIP vol. 12536, 2020 (DOI: 10.1007/978-3-030-66096-3_18).
- V. Tassopoulou, G. Retsinas, and P. Maragos, “Enhancing handwritten text recognition with N-gram sequence decomposition and multitask learning,” in *Proceedings Int. Conference on Pattern Recognition (ICPR)*, pp. 10555–10560, 2020 (DOI: 10.1109/ICPR48806.2021.9412351).
- G. Potamianos, K. Papadimitriou, E. Efthimiou, S.-E. Fotinea, G. Sapountzaki, and P. Maragos, “SL-ReDu: Greek sign language recognition for educational applications. Project description and early results,” in *Proceedings of the ACM International Conference on Pervasive Technologies Related to Assistive Environments (PETRA)*, 2020 (DOI: 10.1145/3389189.3398006).

The first page of the first and second publications listed above are shown in Figure 5.



Figure 5: The first page of two of the SL-ReDu publications in the proceedings of refereed international conferences during the first year of the project (**left:** Interspeech 2020; **right:** EUSIPCO 2020).

5 The SL-ReDu Presentations During Y1

The five aforementioned publications in Section 4 have been presented during Y1 of the project at the corresponding conferences, all of which have been held virtually (online) due to the ongoing pandemic crisis. All presentations involved pre-recorded videos using slides with voice-over, and in some occasions the SL-ReDu participant was available online to answer questions during and following the presentation (depending on the format and online platform adopted by each specific conference). An effort has been made to produce the slides following a uniform style and employing a consistent template across the presentations, with all slides bearing the logo of H.F.R.I. and the final slide including the acknowledgements text requested by H.F.R.I. in the implementation guide of the funding action. An example of such format is shown in Figure 6, where the first and last slide of the project's Interspeech 2020 presentation is depicted.

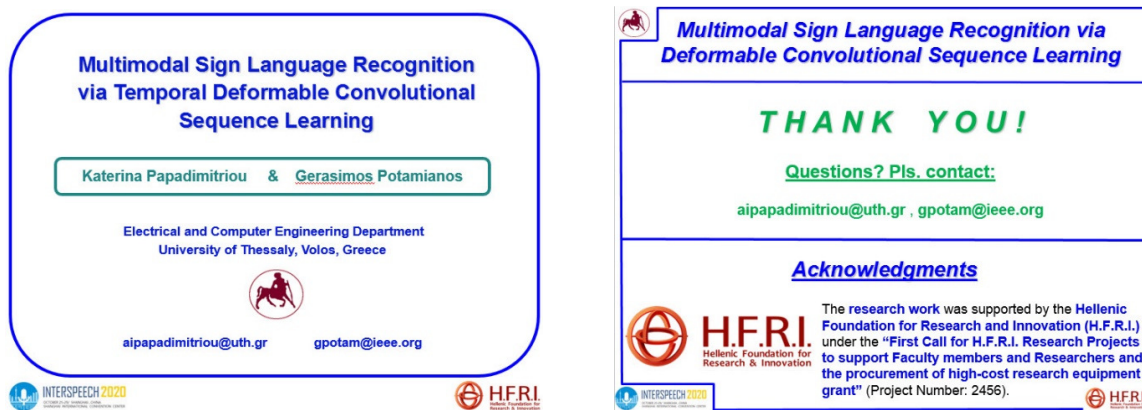


Figure 6: The first slide (left) and last slide (right) of the SL-ReDu presentation at Interspeech 2020, showcasing the general presentation style adopted and the acknowledgement to H.F.R.I. funding.

In summary, the five project presentations (listed in correspondence to the papers of Section 4) were made virtually by:

- G. Potamianos at the *2020 Annual Conference of the International Speech Communication Association* (Interspeech 2020), in October 2020.
- G. Potamianos at the *28th European Conference on Signal Processing* (EUSIPCO 2020), in January 2021.
- K. Papadimitriou at the *2020 Sign Language Recognition, Translation and Production Workshop* (SLRTP 2020), held in conjunction with the *16th European Conference on Computer Vision* (ECCV 2020), in August 2020.
- V. Tassopoulou at the *25th International Conference on Pattern Recognition* (ICPR 2020), in January 2021.
- G. Potamianos at the *13th International Conference on PErvasive Technologies Related to Assistive Environments* (PETRA 2020), in July 2020.

6 The SL-ReDu Brochure and Poster

As further boost SL-ReDu dissemination, we have designed a folding brochure, aiming to distribute it during conferences and other events, thus allowing additional project dissemination and an easy reference to its activities and resources. Such distribution is expected to take place primarily during the last year the project (Y3), as currently there are no events taking place with physical presence due to the pandemic. The one side of the brochure (3 of its 6 column-folds) is depicted at the left part of Figure 7. Note that at its bottom, five handshapes are shown, corresponding to the fingerspelling of the project name. In addition, we have designed a project poster, shown at the right side of Figure 7.



Figure 7: The SL-ReDu project brochure (one of its sides is shown, left) and the project poster (right).

7 Additional Dissemination and Educational Activities

In addition to the above activities, the following two dissemination actions have been taken:

- The project has been listed at the website of the host institution (UTH-ECE) under the department active research projects (in both Greek and English), as also shown at the left part of Figure 8.
- The project has provided dissemination information to H.F.R.I., as requested in November 2020, in both Greek and English using the PowerPoint presentation format provided by the funding agency.

The figure consists of two side-by-side screenshots. The left screenshot shows a Greek website for the Department of Electrical and Mechanical Engineering at the University of Thessaly. It features a table with project details for 'SL-ReDu: Αναγνώριση Νοηματικής Γλώσσας στην Εκπαίδευση'. The table includes fields for the principal investigator (Gerassimos Potamianos), the project title, the scientific area (Engineering Sciences & Technology), the institution (University of Thessaly), the duration (2020-2023), and the project website. Below the table is a paragraph of text in Greek. The right screenshot shows a PowerPoint slide titled 'SL-ReDu' with the same project information in English. It includes the title, principal investigator, reader-friendly title, scientific area, institution, host institution, collaborating institution, project webpage, budget (180,000 Euros), and duration (36 months).

Επιστ. Υπεύθυνος	Ποταμιάνος Γεράσιμος, Αναπληρωτής Καθηγητής E-mail: gpotamianos@e-ce.uth.gr
Είδη	SL-ReDu: Αναγνώριση Νοηματικής Γλώσσας στην Εκπαίδευση
Συμμετέχοντες Φορείς	<ul style="list-style-type: none">• Τμήμα Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών• Παιδαγωγικό Τμήμα Ειδικής Αγωγής• Αθλητά Ερευνητικό Κέντρο Καινοτομίας στις Τεχνολογίες των Επικοινωνιών και της Γνώσης (Ε.Κ.ΉΛΗΝΑ) – Ινστιτούτο Επιμόρφωσης του Λόγου (IEΛ)
Φορέας χρηματοδότησης	Ελληνικό Ίδρυμα Έρευνας & Καινοτομίας (ΕΛΙΔΕΚ)
Διάρκεια	2020 – 2023
Ιστοσελίδα	https://sl-redu.e-ce.uth.gr/

Περιγραφή

Το SL-ReDu αποτελεί ένα κανονικό ερευνητικό έργο το οποίο, εκμεταλλευόμενο την πρόσφατη πρόοδο στους τομείς της βαθιάς μηχανικής μάθησης και όρασης υπολογιστών, στοχεύει στην προσαρμογή της τεχνογνωσίας στην αναγνώριση της Ελληνικής Νοηματικής Γλώσσας (ΕΝΓ), επικεντρώνοντας την προσοχή του στο στάδιο εφαρμογής της εκπαίδευσης στην ΕΝΓ ως δεύτερης γλώσσας (Γ2). Ο κύριος στόχος του έργου είναι να προσφέρει το παραπάνω στάδιο εφαρμογής και η αντιμετώπιση της ανάγκης για τυποποιημένη εκπαίδευση και αποτελεσματική αυτο-αξιολόγηση στην ΕΝΓ ως Γ2. Διεξάγοντας για το σκοπό αυτό διεπιστημονική έρευνα στις επιστήμες μηχανικού και στις ανθρωπιστικές επιστήμες. Το SL-ReDu έχει διάρκεια τριών ετών, υλοποιείται με τη συνεργασία δύο τμημάτων του Πανεπιστημίου Θεσσαλίας (του Τμήματος Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών της Πολυτεχνικής Σχολής και του Παιδαγωγικού Τμήματος Ειδικής Αγωγής της Σχολής Ανθρωπιστικών και Κοινωνικών Επιστημών) και του Ερευνητικού Κέντρου «ΑΒΗΝΑ», και η χρηματοδότησή του γίνεται από το Ελληνικό Ίδρυμα Έρευνας & Καινοτομίας.

Title of the research project: Sign Language Recognition in Education
Principal Investigator: Gerassimos Potamianos
Reader-friendly title: SL-ReDu
Scientific Area: Engineering Sciences & Technology
Institution and Country: University of Thessaly, Greece
Host institution: University of Thessaly
Collaborating Institution(s): Athens Research Center / ILSP
Project webpage (if applicable):
Budget: 180,000 Euros
Duration: 36 months

Figure 8: Project information listed at the UTH-ECE active research projects website, here shown in Greek (**left**); SL-ReDu overview presentation information sent to H.F.R.I. as requested in November 2020 – its first slide is shown here in English (**right**).

Finally, supporting advanced education in the SL-ReDu research areas, a number of student Theses, ongoing or finalized, are related to the project. Specifically, the following Ph.D. Thesis is ongoing:

- K. Papadimitriou, *Sign Language Recognition*, supervised by G. Potamianos,

while the following Diploma Theses have been completed or are ongoing (at the time of composing this deliverable – Jan. 2021):

- Antonios Alexos, *Video Translation to Sign Language*, supervised by G. Potamianos [complete],
- Heleni Veroni, *Fingerspelling Recognition from Video*, supervised by G. Potamianos [ongoing],
- Maria Parelli, *Deep Learning Based Sign Language Recognition*, supervised by P. Maragos [ongoing].

8 Future Dissemination Plans

The SL-ReDu partners plan to continue dissemination activities in a series of events that attract heavy interest by the general public as well as some of the project stakeholders and policy makers. Among those, we plan to organize two online events, one presented in Greek by UTH-SED and one presented directly in the Greek Sign Language (GSL) in collaboration with Deaf stakeholders. The two events will be addressed to experts and policy makers in the field, the National Institute for the Deaf, Deaf Schools, GSL tutors, GSL private education institutions, GSL interpreters, and the Deaf community. In addition, depending on the public health conditions with respect to the pandemic at the time, we plan to participate in the future at the Athens Science Festival and Researcher's Night, as well as the upcoming Deaf Festival that attracts visitors from the industry on deafness and sign language and is open to the general public, as it hosts progress and activities in the field of technology related to deafness and sign language by means of exhibition stands and/or live presentation in the Festival's workshop.

Further, a special session concerning the "technological landscape of deaf/hearing communication" is being organized as part of the 15th International Conference on Universal Access in Human-Computer Interaction (<http://2021.hci.international/UAHCI>). This conference is affiliated to HCI International 2021 and will take place in July 2021, most likely in a virtual / online format due to the pandemic. In addition, AthenaRC plans to jointly organize the 10th Workshop on the Representation and Processing of Sign Languages, as part of the Language Resources and Evaluation Conference (LREC) in June 2022.

Following on the footsteps of our Y1 publications, we plan during Y2 to submit articles in a number of conferences, for example EduLearn 2021 and UAHCI 2021, as well as selected machine vision and signal processing international conferences.

Finally, we will set up a Facebook and a Twitter account to further facilitate project dissemination.

9 Conclusions

In this deliverable, we presented our dissemination activities during the first year of the SL-ReDu project. Specifically, we detailed the design of the project logo, the setup of the project website, the papers published, the presentations made, the project brochure and poster that we produced, as well as some additional dissemination work and student supervision in their thesis work on the project challenging topics. Finally, we outlined our plans for possible future dissemination activities, which will be reported in future deliverables D6.2 and D6.4.