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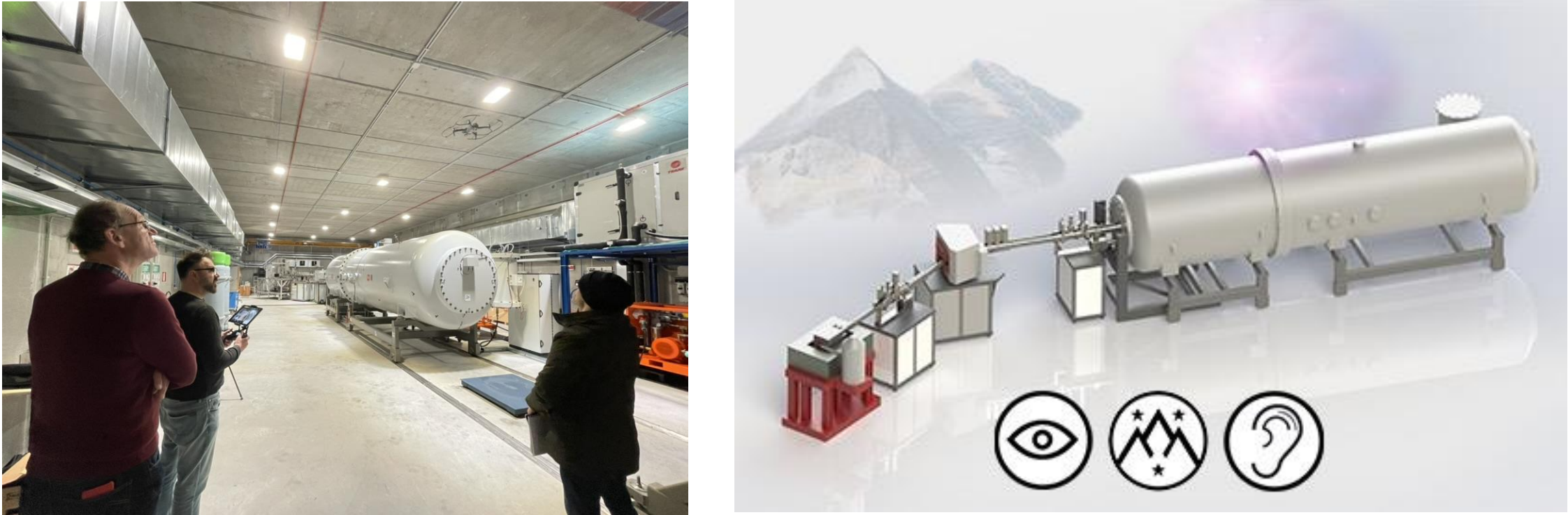
Abstract

Everything we know, including our bodies (and our brains), is made up of building blocks made inside stars: atoms. Surprisingly, to discover the history and properties of the elements, we don't have to go into space: it is in fact in the silence and darkness of a tunnel located in the underground laboratories of Gran Sasso that it is possible to discover the origin of matter. Silence and darkness are precisely the character of this project, which has set itself the challenge of making the description of an astrophysics experiment accessible to blind and deaf people, too often excluded from dissemination activities. Thanks to the collaboration with associations that have been working in the sector for years, it has been possible to create a scale model usable by people with various types of visual and hearing disabilities: come and discover how the nuclear processes that occur inside stars work!

The project involves the installation of a **scale model of the "Bellotti" Ion Beam Facility** located in the underground laboratories of Gran Sasso. The model will be placed on a table and will be designed to be used in a tactile way by the public and therefore **accessible to blind people**. Using specific **QR codes** used by apps dedicated to blind and deaf people, it will be possible to access material that explains the project with audio, **text and video with sign language**. Tutors will be trained to show "Stelle sulla Terra" to impaired persons.

Stars on Earth Making off

Create the tactile model by means of photometry and CAD drawings and print it with 3D printers



Produce video with LIS (sign language) in collaboration with deaf people association for correct use of terms and metaphors



Thematics treated by the videos

1. How nuclear reactions participate in nucleosynthesis
2. How to study a nuclear reaction in laboratory
3. Why go underground
4. From the tank to target: the travel of the beam
5. The target station in details

Here below some examples of tools to explain visual concepts to blind persons

Workshops and training seminar on Inclusive

One of the goals of "Stars on Earth" is to raise awareness and train the people involved in the project. For this purpose, Doctor Erika Labbé, head of communications at the Diego Portales University (Chile) and active in the development and dissemination of inclusive astronomy projects since 2015, was invited.



During the workshop she showed examples of **useful tools for blind and deaf persons** (such as the solar system you can experience close to the poster) and she advertised us on what not to do.



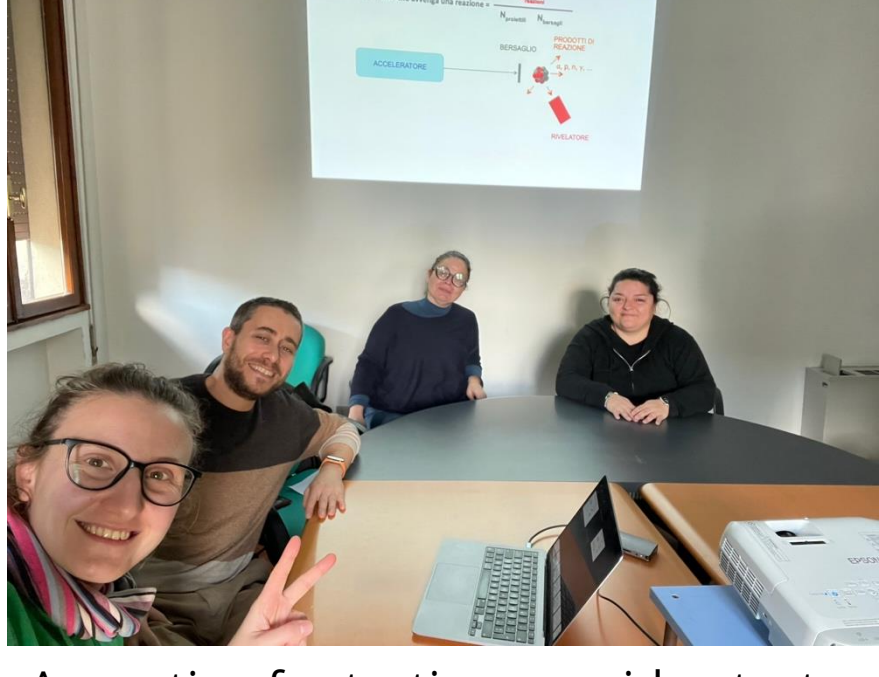
You can see the seminar at this link:
<https://www.youtube.com/watch?v=N1ZZq1Jz3sM>

Final Thoughts

It is important to **get associations involved** to produce accessible material and be allowed to **change our thinking attitude** (metaphors, visualization concepts, translation in sign language ...)

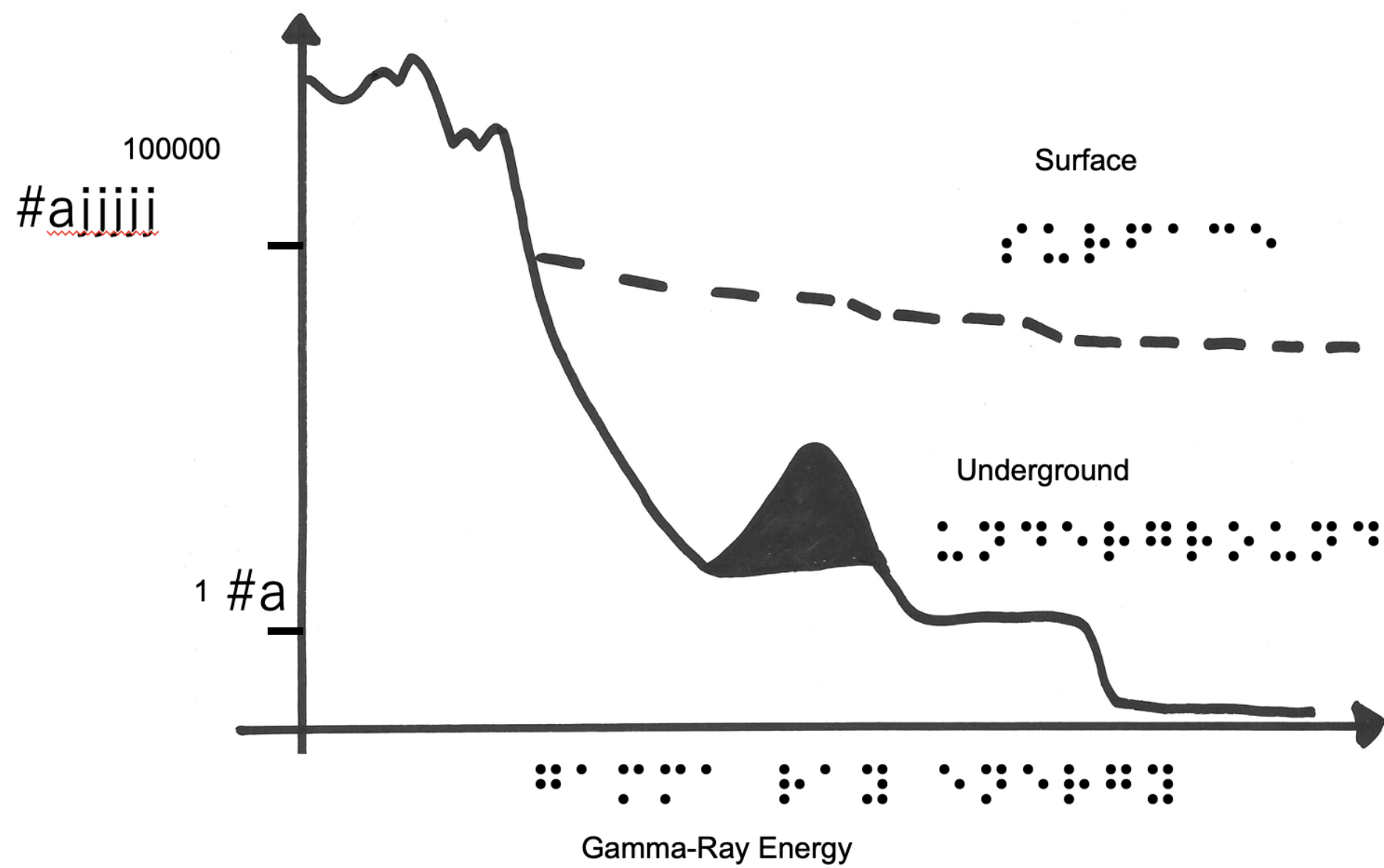
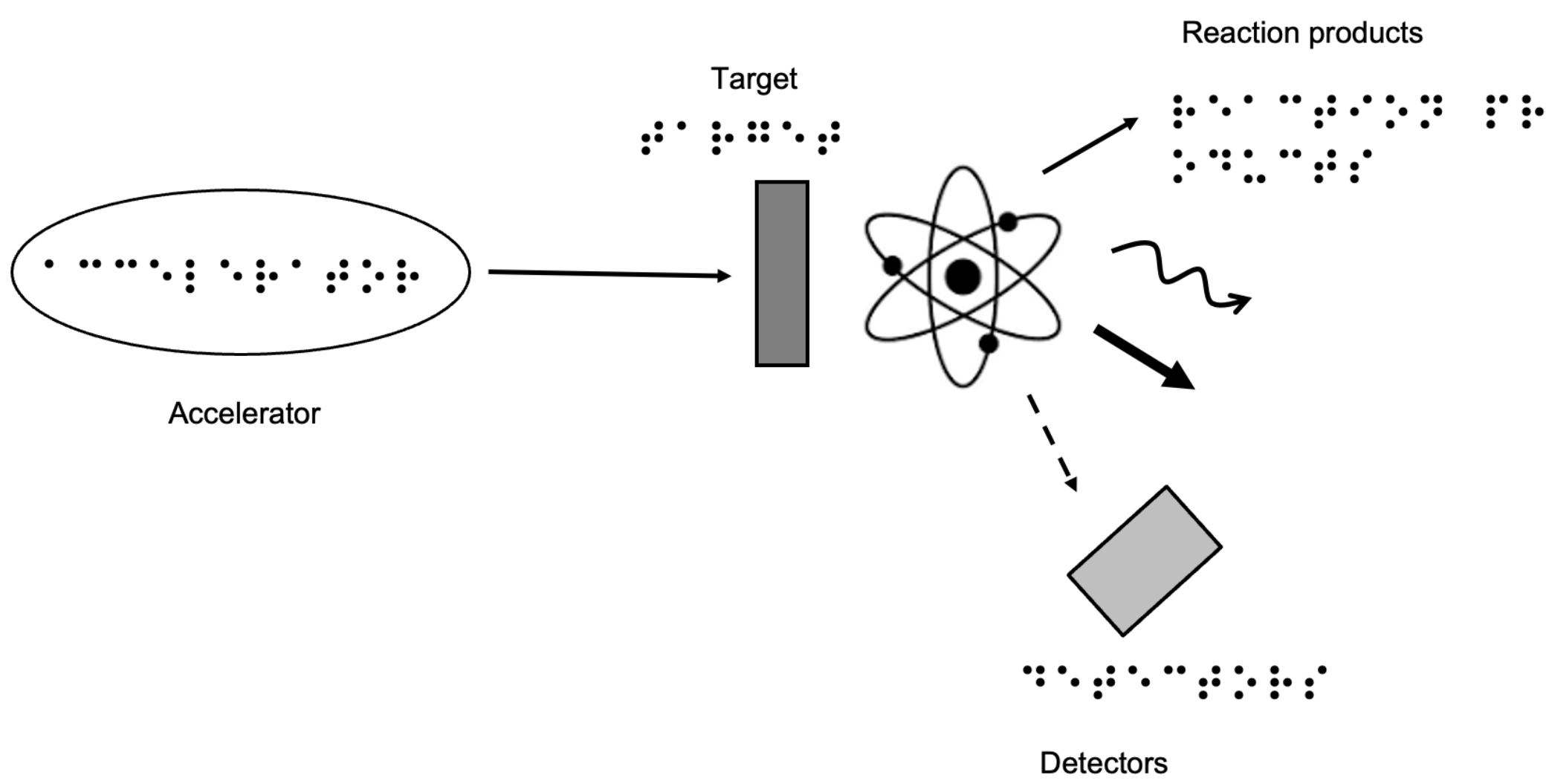
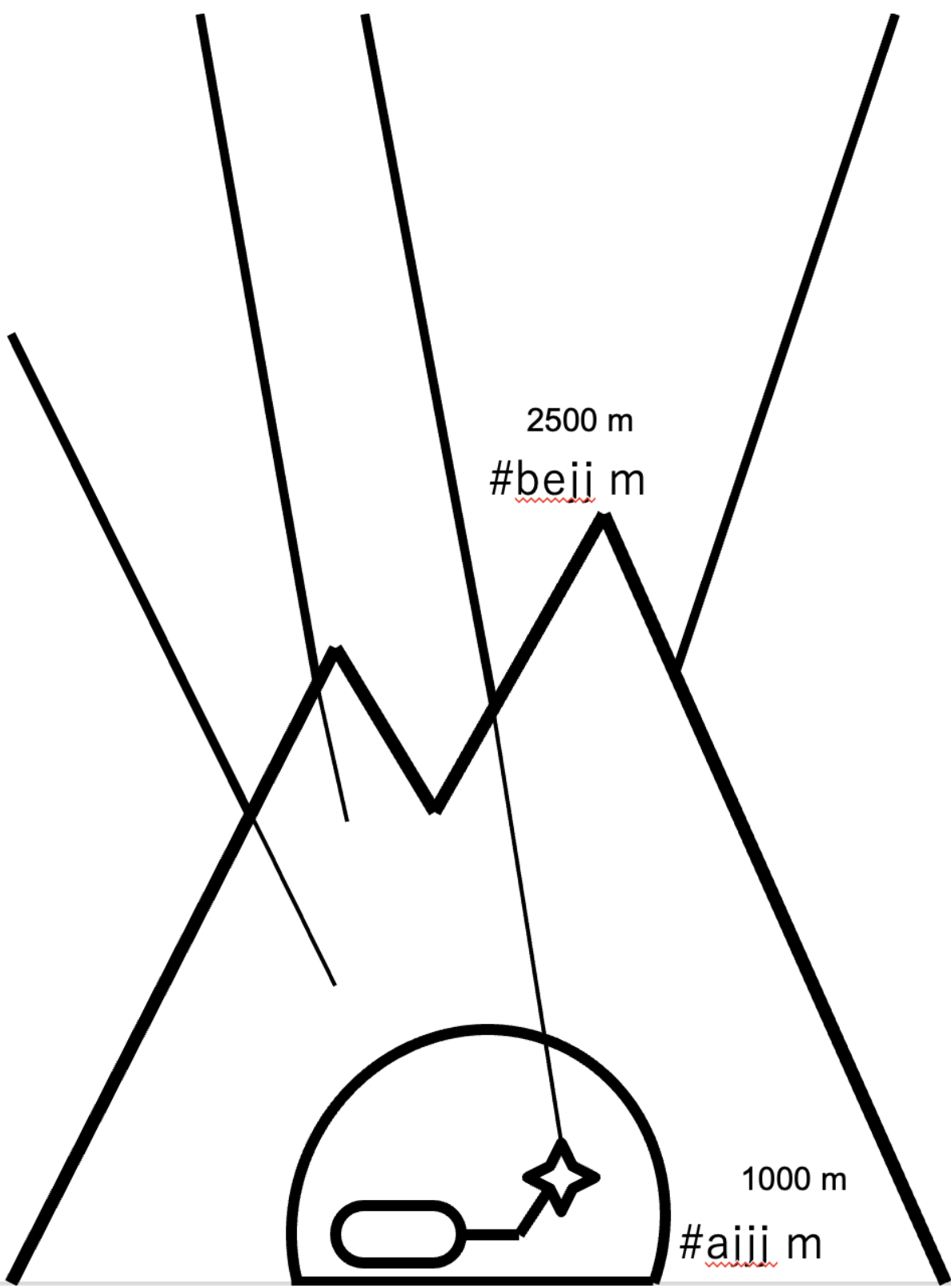
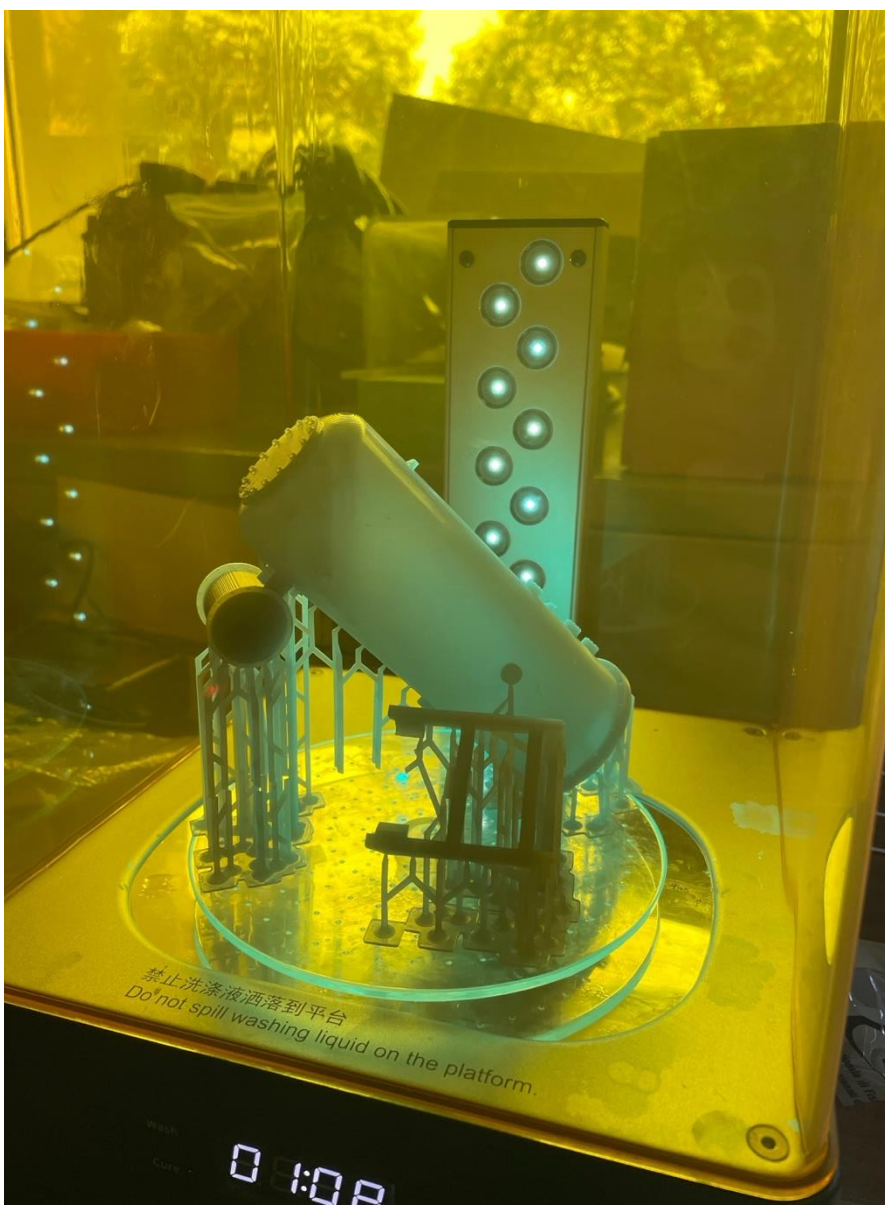


A blind person expert in communication testing our activity during an event at the Hollman Foundation



A meeting for testing our video text with the association of deaf people

We are still testing the production procedures and collecting feedbacks from possible audience



Main institutions involved:



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

