Project 2

Improving communication between MND patients and their caregivers.

Mandar Rane
(Project guide)

Sachit Shyam
CD 2015–17

…unable to move your legs…

…unable to lift your arms…

…can’t move your tongue…

Motor neuron disease

Degeneration of motor neurons.

Progressive disease.

Can affect at any age.

Most likely after the age of 40.

Motor neuron disease

Non curable

Glutamate poisoning

ALS is the most extreme case of an MND.

Challenges:

Patients

Difficult to do day to day tasks.

Communication hinders.

Patience level starts to decrease.

Challenges:

Caregivers

Understanding speech.

New ways in order to communicate.

Has to adapt if the caregiver changes.

My role

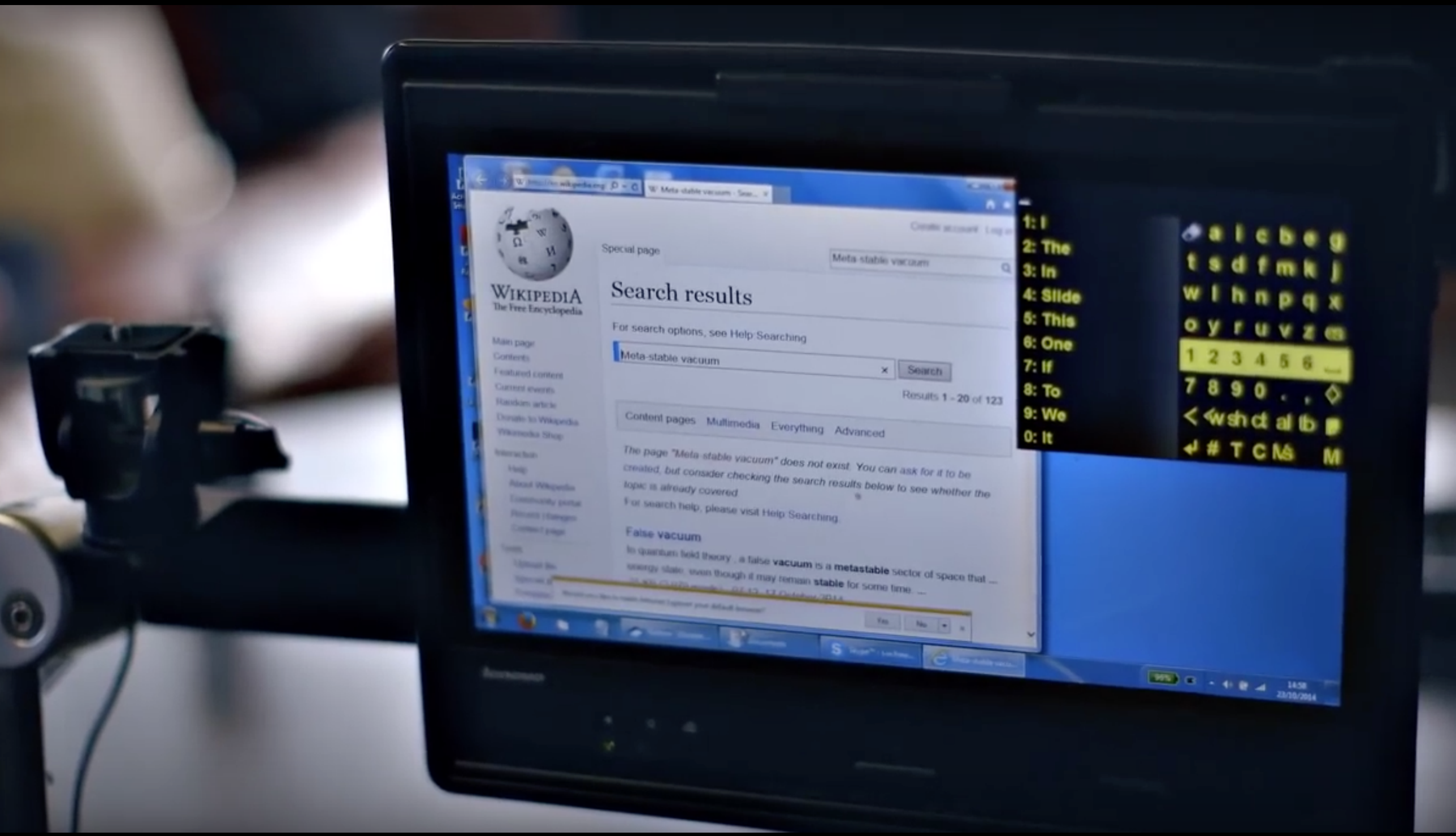
Bridge the communication gap
through visual communication.

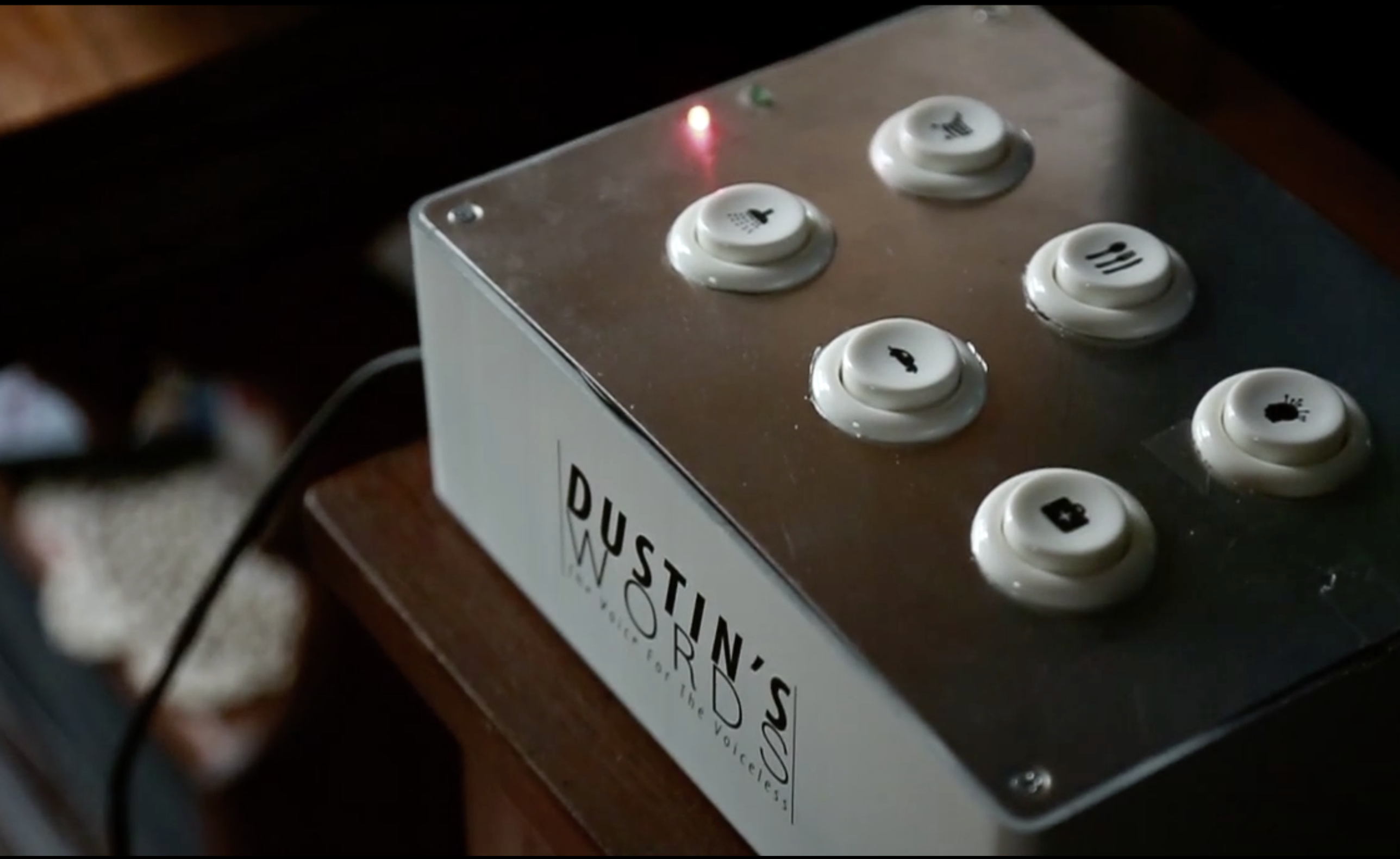
Study and categorise needs.

Create visual aids (iconography).

Works done so far in the assistive devices.

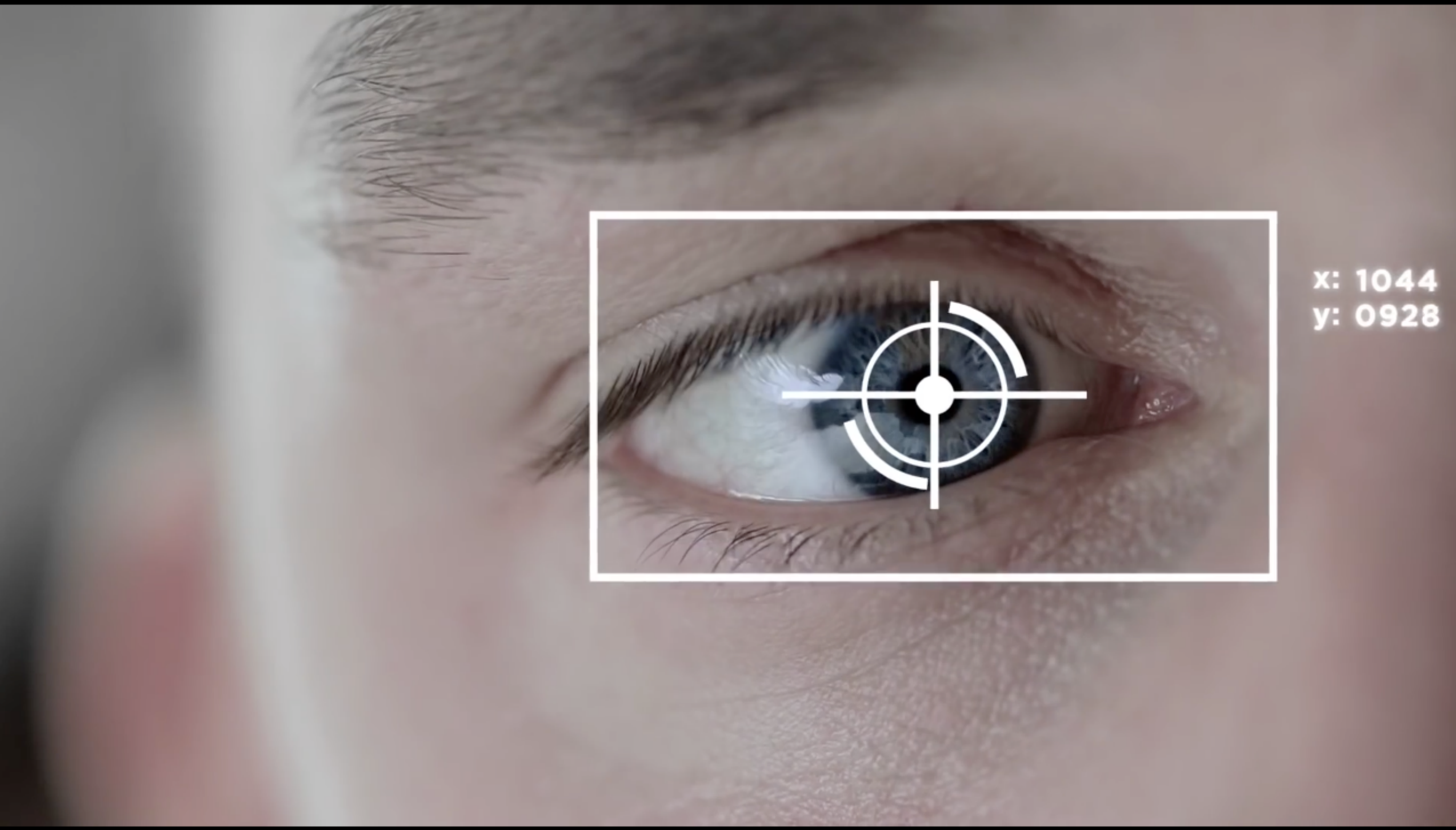
I've lucky Intel supported me, without them, I wouldn't have been able to do my work on Cosmology and
1: the
2: I
3: a
4: then
5: we
6: it
7: you
8: have
9: that
0: is
lenovo


Special page
Meta stable vacuum
WIKIPEDIA
The Free Encyclopedia
Search results
For search options, see Help Searching
Meta-stable vacuum
Search
Results 1 - 20 of 123
Content pages
Multimedia
Everything
Advanced
The page "Meta stable vacuum" does not exist. You can ask for it to be created, but consider checking the search results below to see whether the topic is already covered.
For search help, please visit Help Searching.
False vacuum
In quantum field theory , a false vacuum is a metastable sector of space that ... energy state, even though it may remain stable for some time. ...
1: I
2: The
3: In
4: Slide
5: This
6: One
7: If
8: To
9: We
0: It


DUSTIN'S
WORD
a voice for the voiceless

Received: Apr 18, 2:54 pm
From: Dustin Reamer
I'm hungry, could you fix me a snack please?
Text: 0/160
1/7
Abc
To reply, just type
To Messages
Options
LG
1 2 3 4 5 6 7 8 9 0
Q W E R T Y U I O P
A S D F G H J K L
Z X C V SPACE B N M
SEND
END
CLR

DUSTIN'S
WORDS
The Voice For The Voiceless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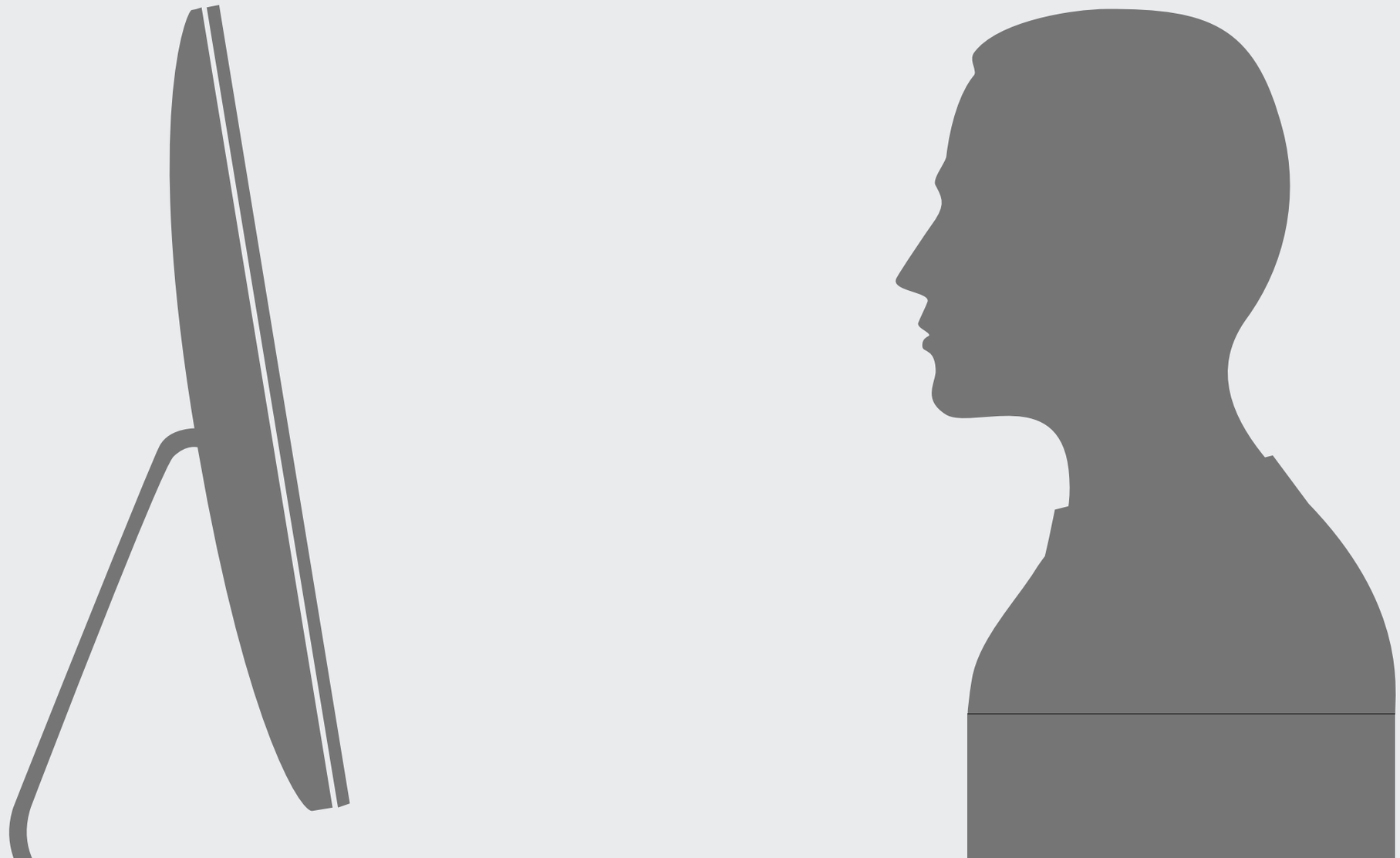
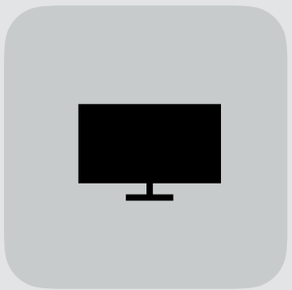
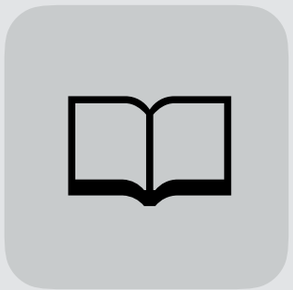
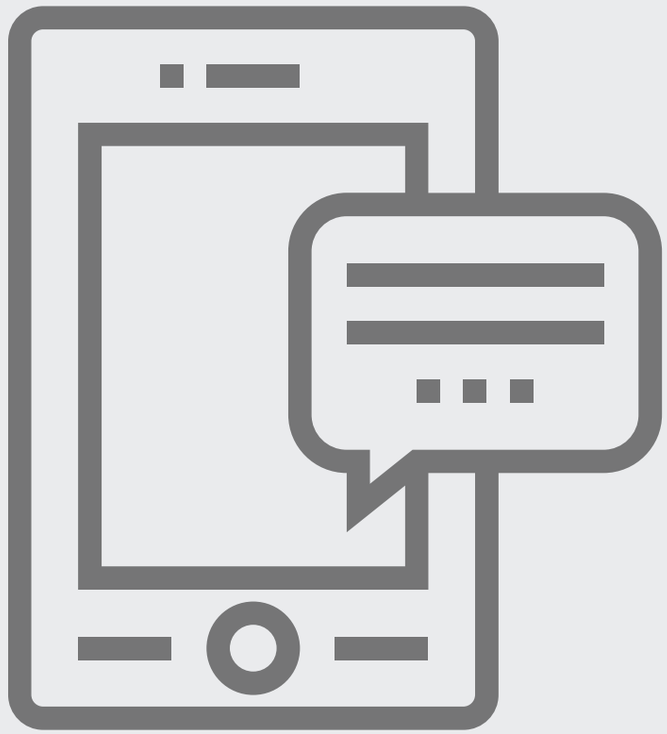
y: 0928









Initial plan

Meeting the patients and caregivers.

Identifying the needs.

Short demos.

water tv tea radio

book newspaper brushing

bath washroom yes/no

sleep food change sides

Noun Project

Earlier plan

Identify the needs

Categorise them

Create

User testing

Current plan

Identify the needs

User testing

Create

User testing

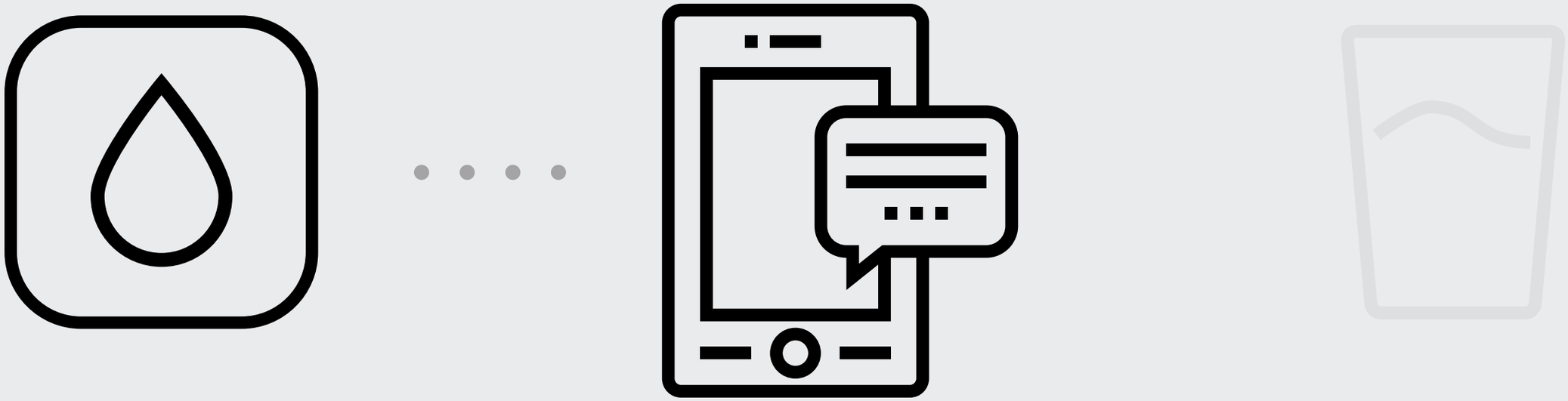
“I am feeling thirsty.
Can I have a
glass of water?”

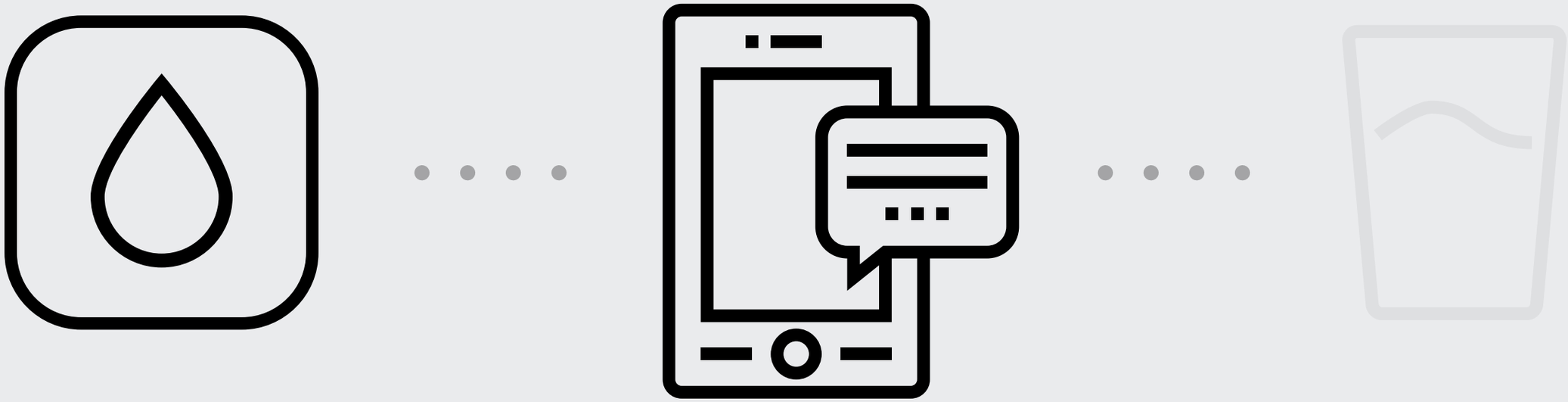
“I am feeling thirsty.
Can I have a
glass of water?”

“I am feeling thirsty.
Can I have a
glass of water?”

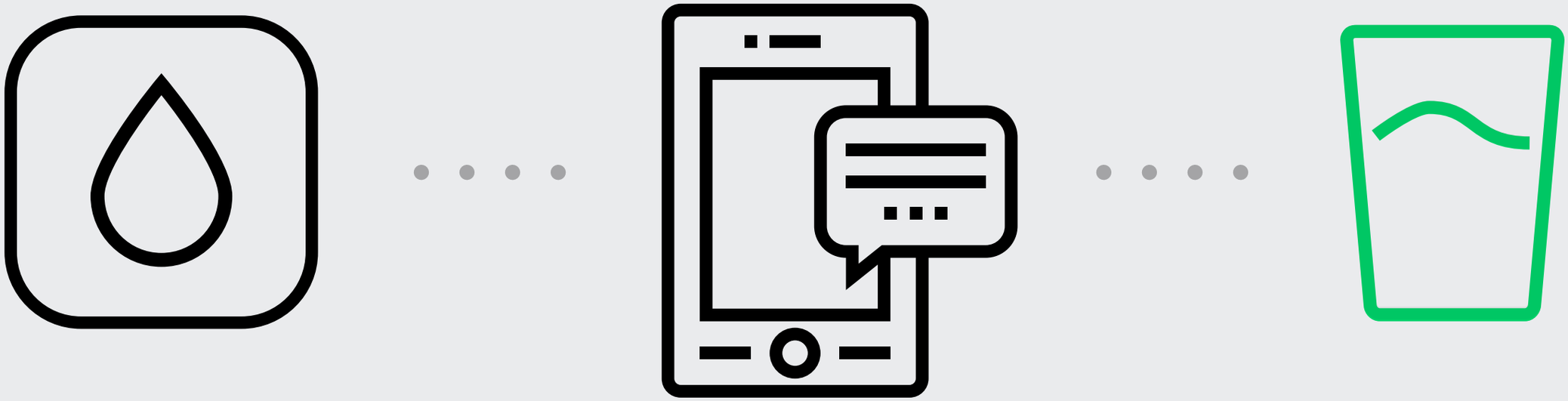
“I am feeling thirsty.
Can I have a
glass of water?”

“I am feeling thirsty.
Can I have a
glass of water?”





Could you please
get me a glass of water



Could you please
get me a glass of water

But why an icon
why not an image?

Simplifies the form

Easy to identify in first go

Unifies

Scalable on digital platform

How do we determine what needs require icons/pictograms?

We design for the very basic tasks first

How to determine which icon is the best ?

Create — test — iterate

How to evaluate?

ISO 9186-1:2014

- Appropriateness
- Comprehensibility

User testing

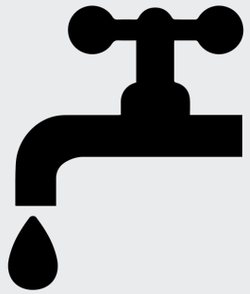
Appropriateness ranking

“I need water to drink.”

Most appropriate

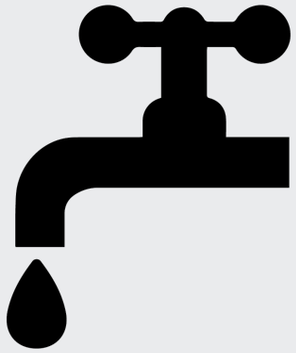
Moderately appropriate

Least appropriate



Public
environment

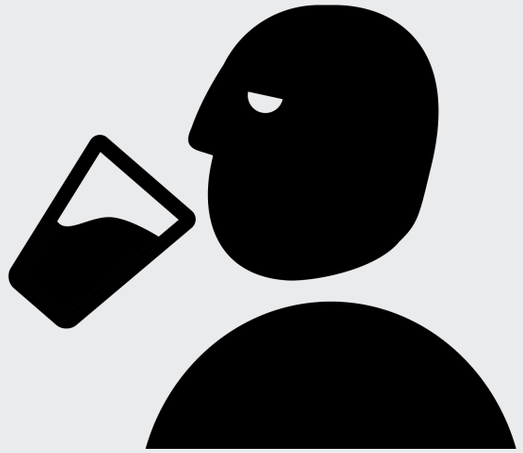
Direct pictogram



Public
environment

Abstract symbol

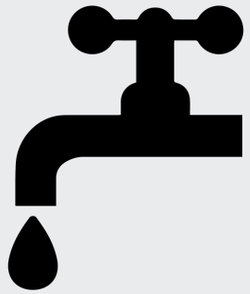
Objectified



Action

Action

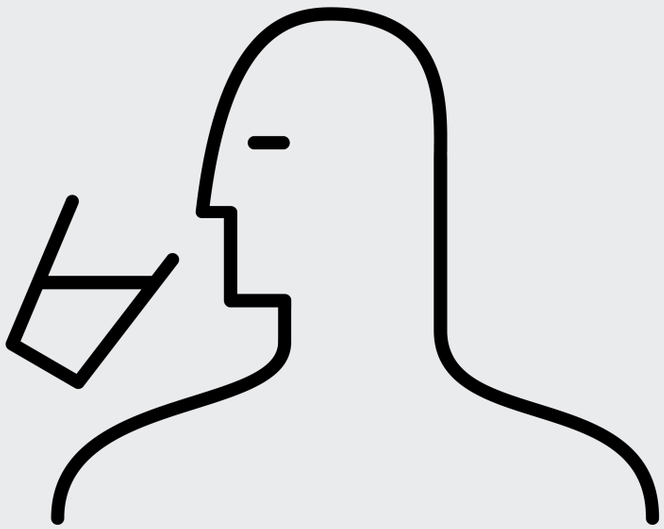
Abstract
and direct

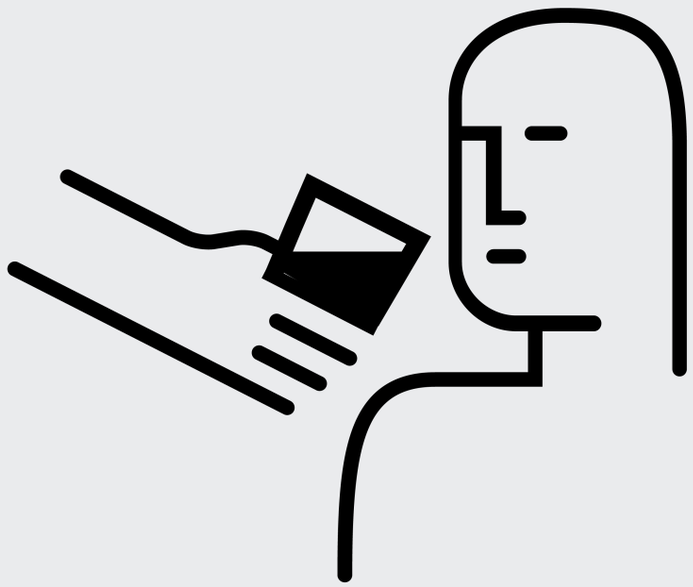


19/22

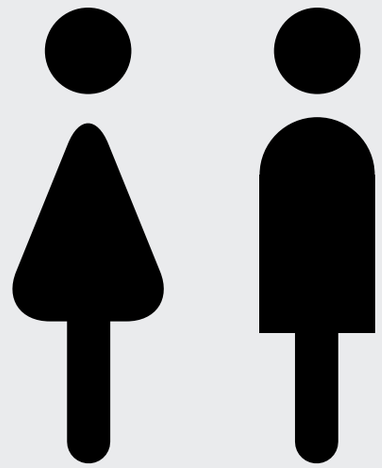
17/22

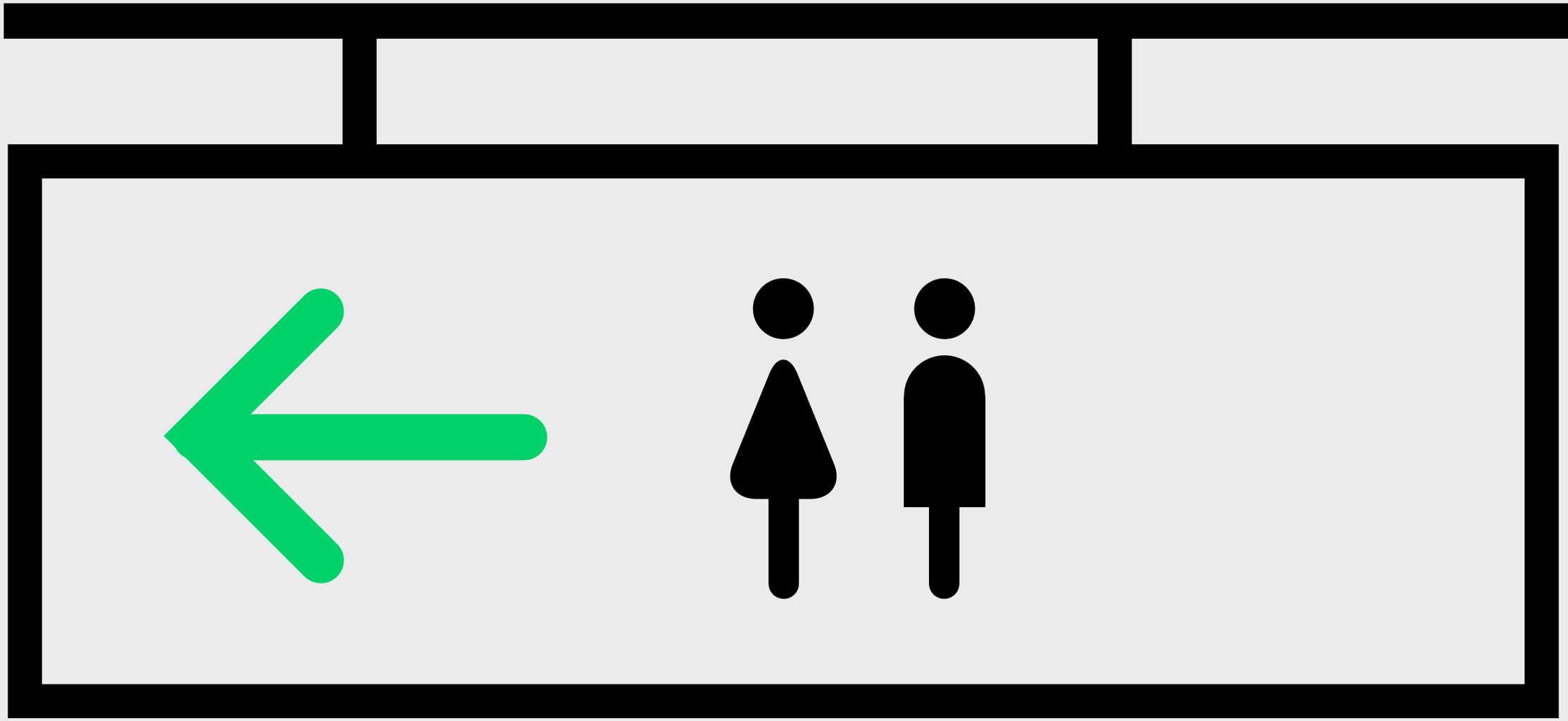
Comprehensibility test

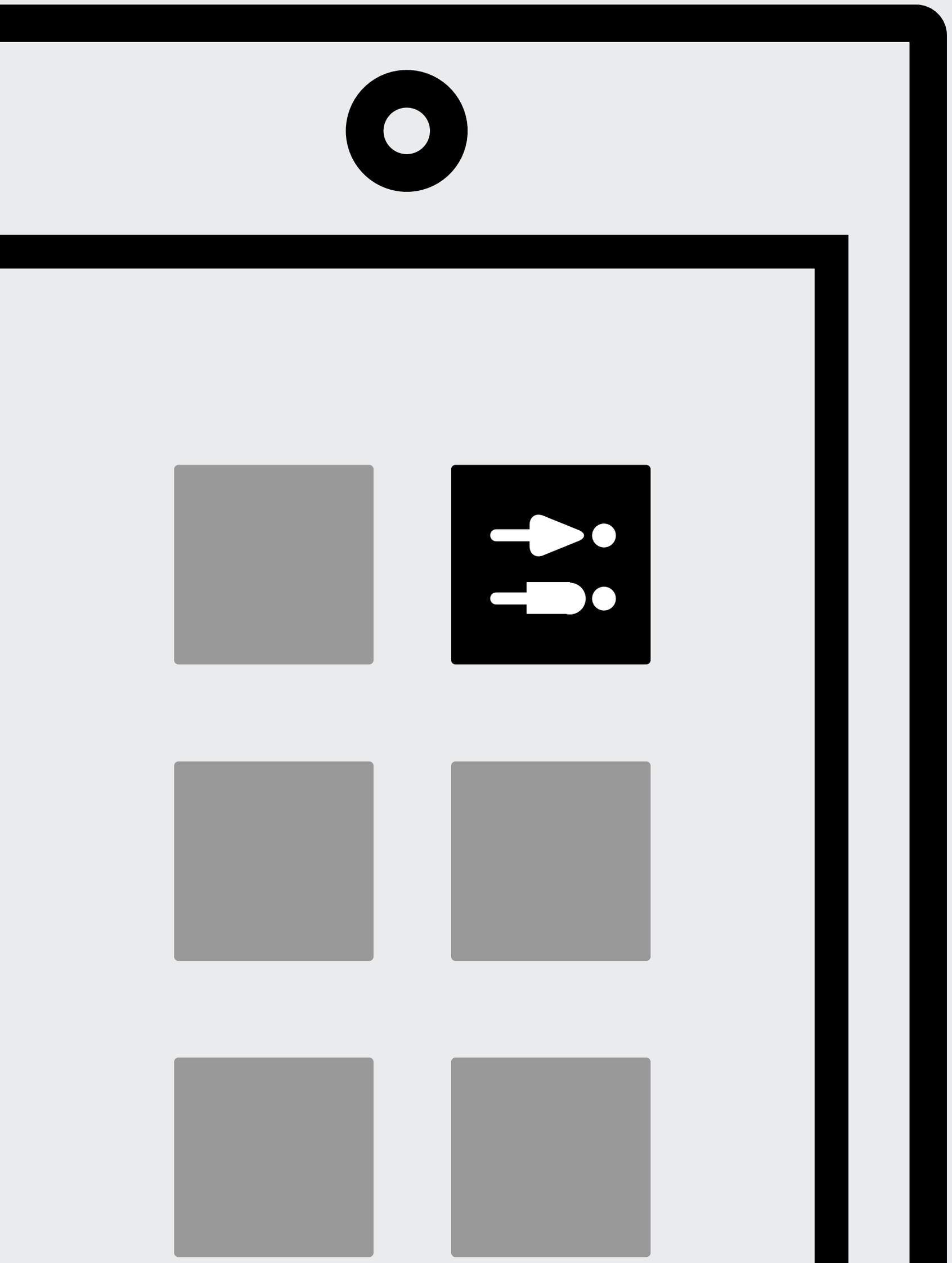


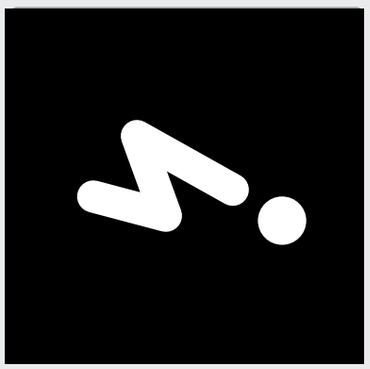


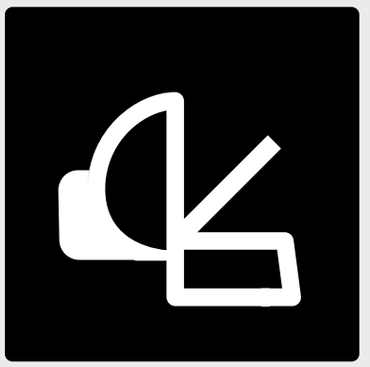
If categories are generic why not use the already designed icons/pictograms?



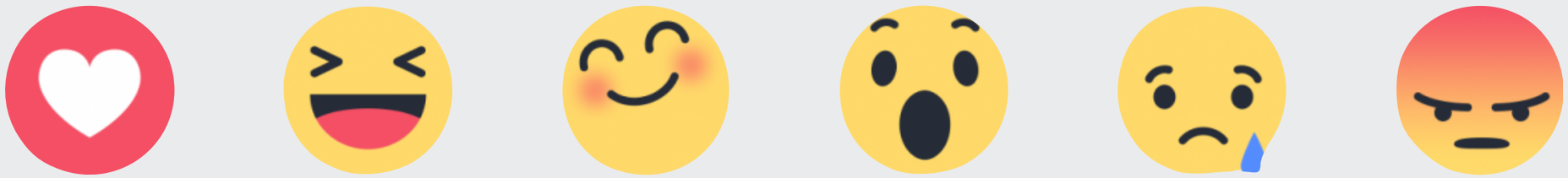








Other scopes



Interaction 1

Female

65 years old

Maldives

Brother and
daughter take care

Lies down for
most of the time.

Changing sides during
the day and night too.

Complex script hence
cannot use type.

Interaction 2

Male

75 years old

Recently lost the ability to speak still tries his best to speak.

Son takes care

Has to run his business in which son helps.

Interaction 3

Male

75 years old

Hired Caretaker

Makes sounds to get attention

Had a very active lifestyle.

Attendant is always around.

Patient’s relative

… I never try to lift him up from the bed I am scared I might snap his shoulder… Only Nilesh lifts him up…

… He can understand him way better than we ever did.

Patient’s caregiver

… I had an experience to
take care of patients dealing with
spinal cord injuries.

… there wasn’t any formal training.

**… a lot of things are scheduled
through out the day and week.**

Essential needs

Consume

- eat
- drink

Mobility

- move around
- change sides

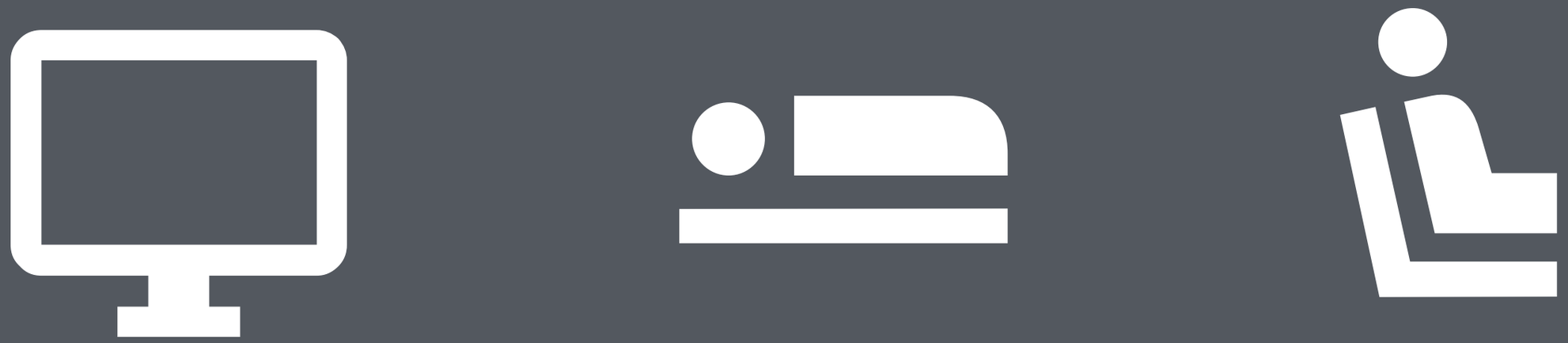
Hygiene

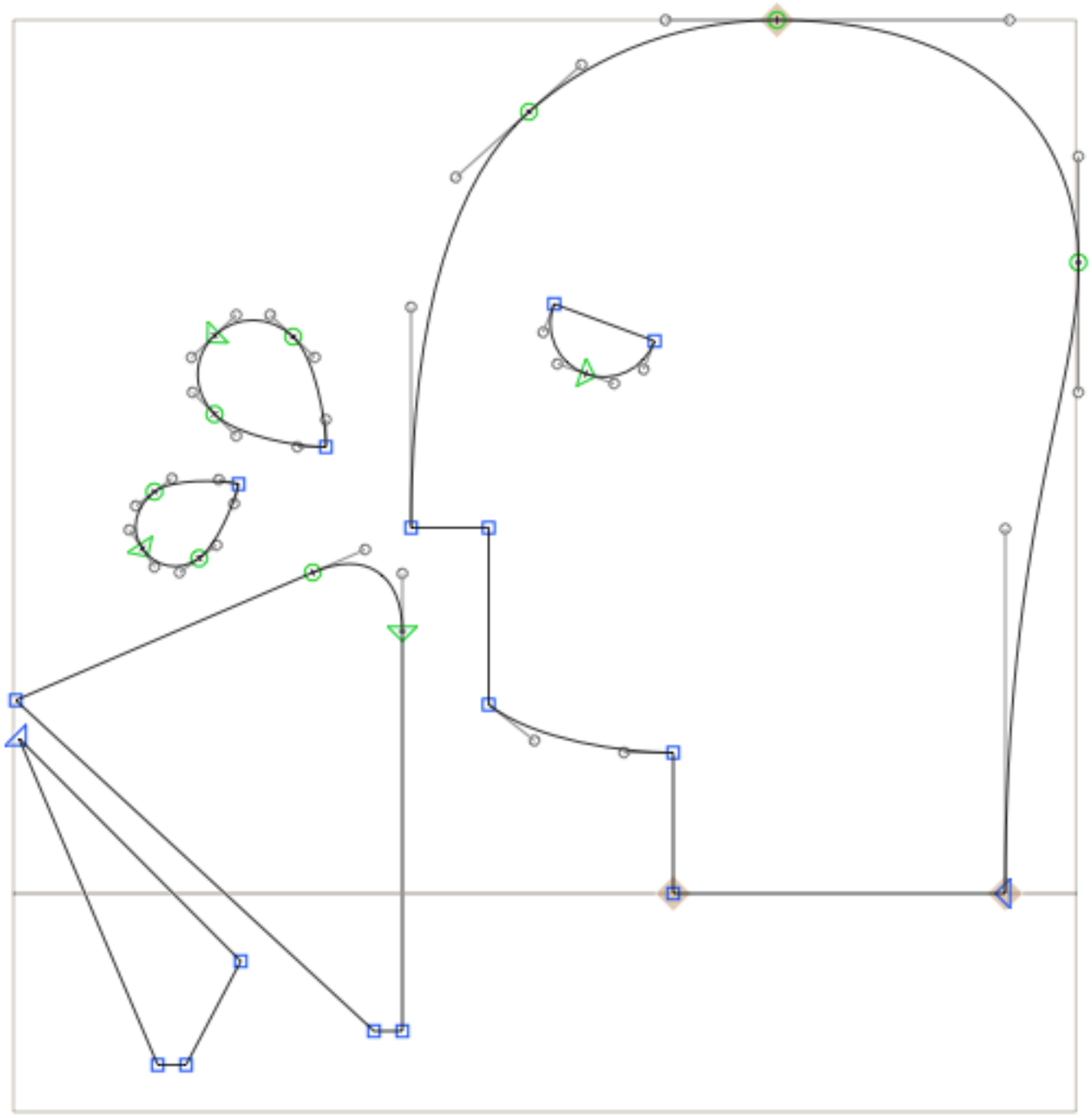
- rinse / spit
- urinate
- stools
- shower

Approval / Disapproval

Leisure activities

Icon set





MND icon_scht - MND icon_scht

Font

/standing /profile /wateronly /washroomstools /washroom /sideprofiledefault/food /hotbeverage /drinking...

Dimensions

Fit Curve

50% 80%

Layers

Copy

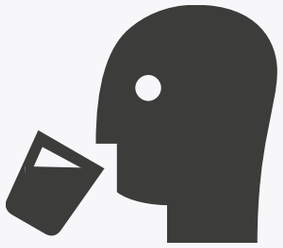
Transformations

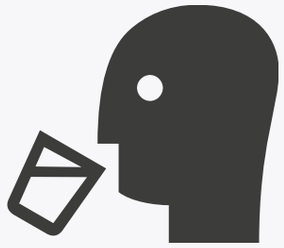
5%

10%

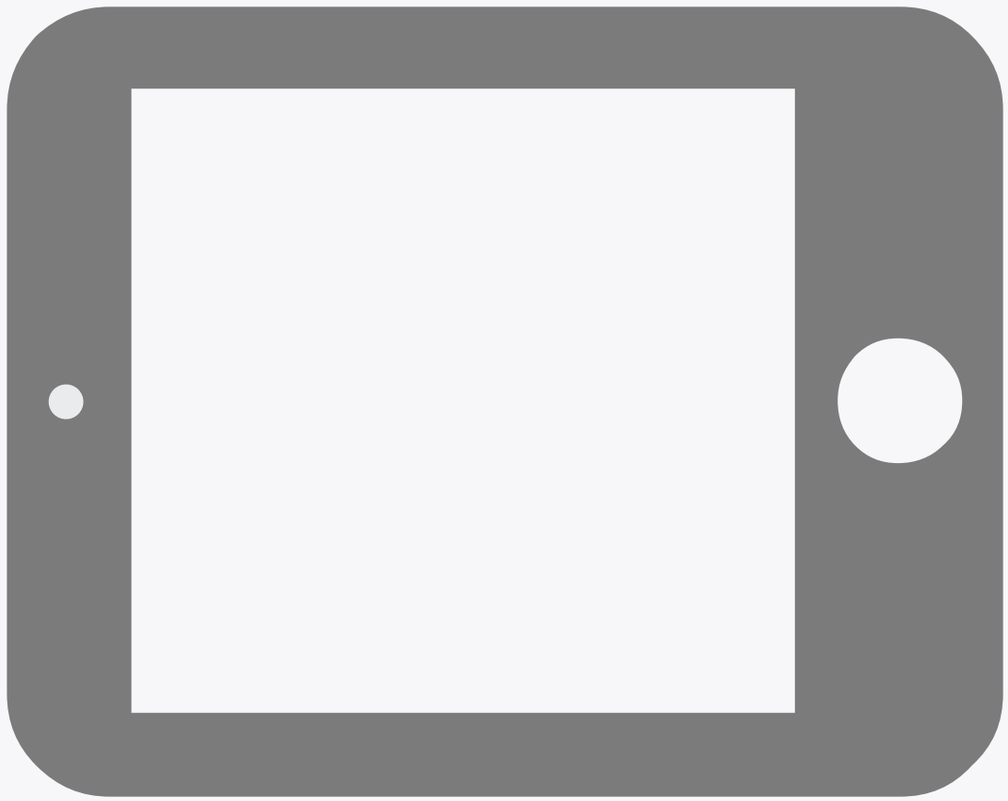
1°

257°





Applications



Eye–tracking device

Icon chart
for hospitals

Visual
cue cards

Key insights

Patient’s and caregiver’s bond
becomes really strong over time.

Not everyone can take
care of the patient.

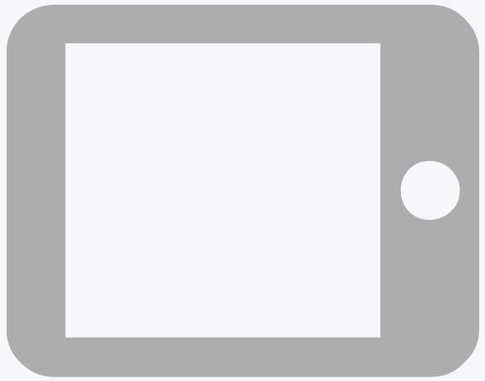
It becomes irritating for a patient to
keep asking him again and again.

An overview

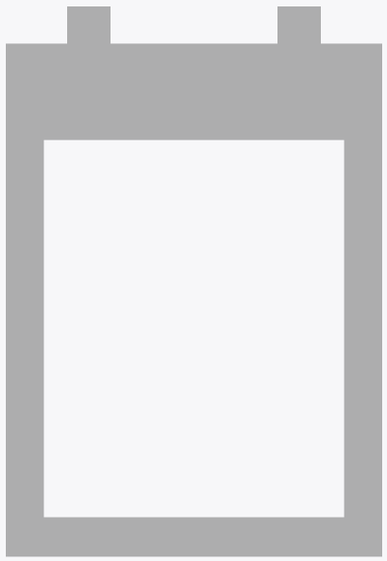
Setting up an ecosystem for the patient's caregiver as well the doctors and the organisation would beneficial for the project in the longer run.

Training platform

Setting up a training platform with the help of MND community and the hospital to train and provide caregivers to the families of the patients



COMMUNICATION SYSTEMS



Building a community

A platform to document the project and making it accessible to everyone is a desirable state of the project.

- **A website.**
- **An online library of icons.**

THANK YOU

Resources

- Pictograms by Yukio Ota
- Handbook of pictorial symbols by Rudolf Modley
- Symbol Comprehension Testing Protocol
- ISO.org
- The Noun Project
- Semiotic elements and classes of signs by Charles Sanders Peirce
- Github
- Google Design