

Presentation

THE HOC
SO3

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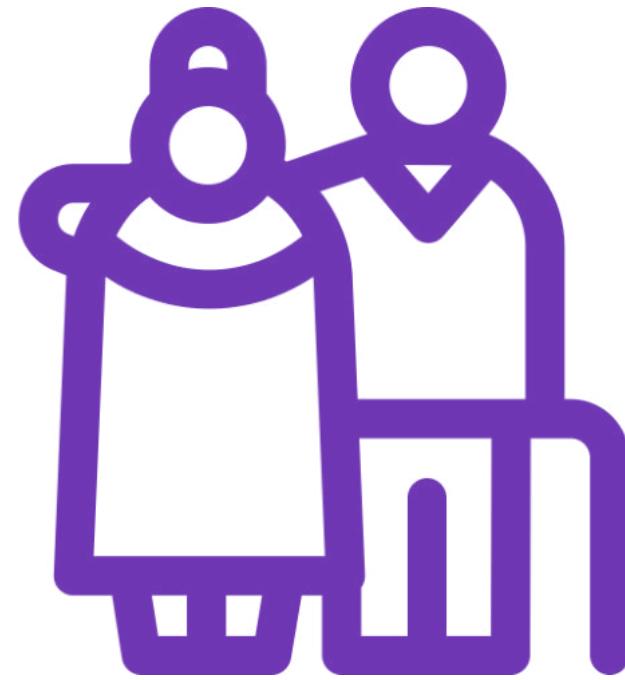
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🏠 Communication design

Requirements

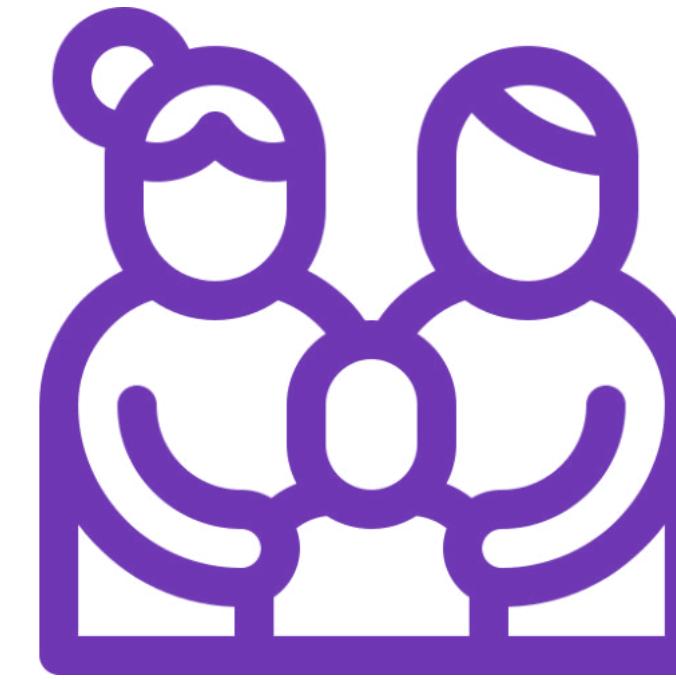


An elderly man or woman
(end-user)

Needs

- To easily use the basic features of digital devices
- To be in touch with family members

Stakeholders



Family member
(son, daughter or grandchildren)

Needs

- Remotely facilitate the elderly person's interaction with technology
- To stay in touch with the elderly person at all times

Requirements

Provide a user-friendly,
adapted interface

Connect people in a quick
and easy way

Be remotely controllable

Provide a stable
communication

Goals



Solution – UX Design

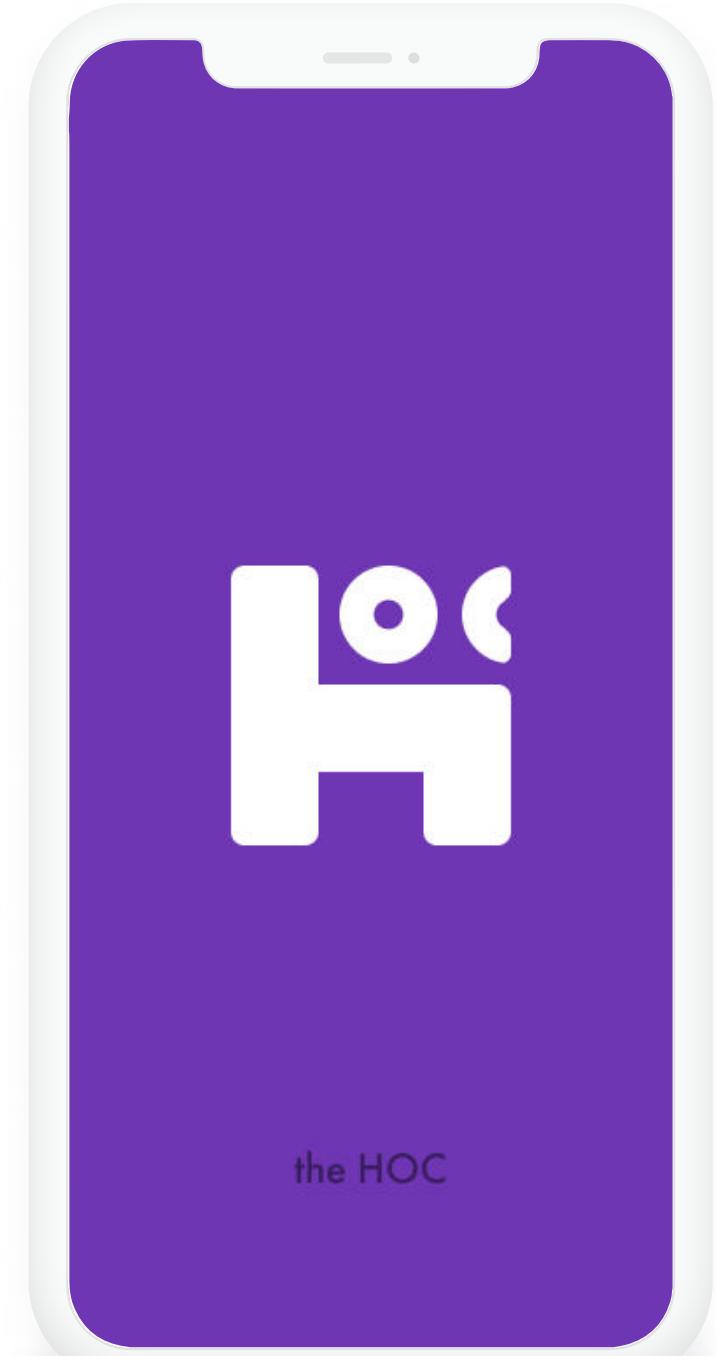
"The HOC" system



Smart object
(for elderly)



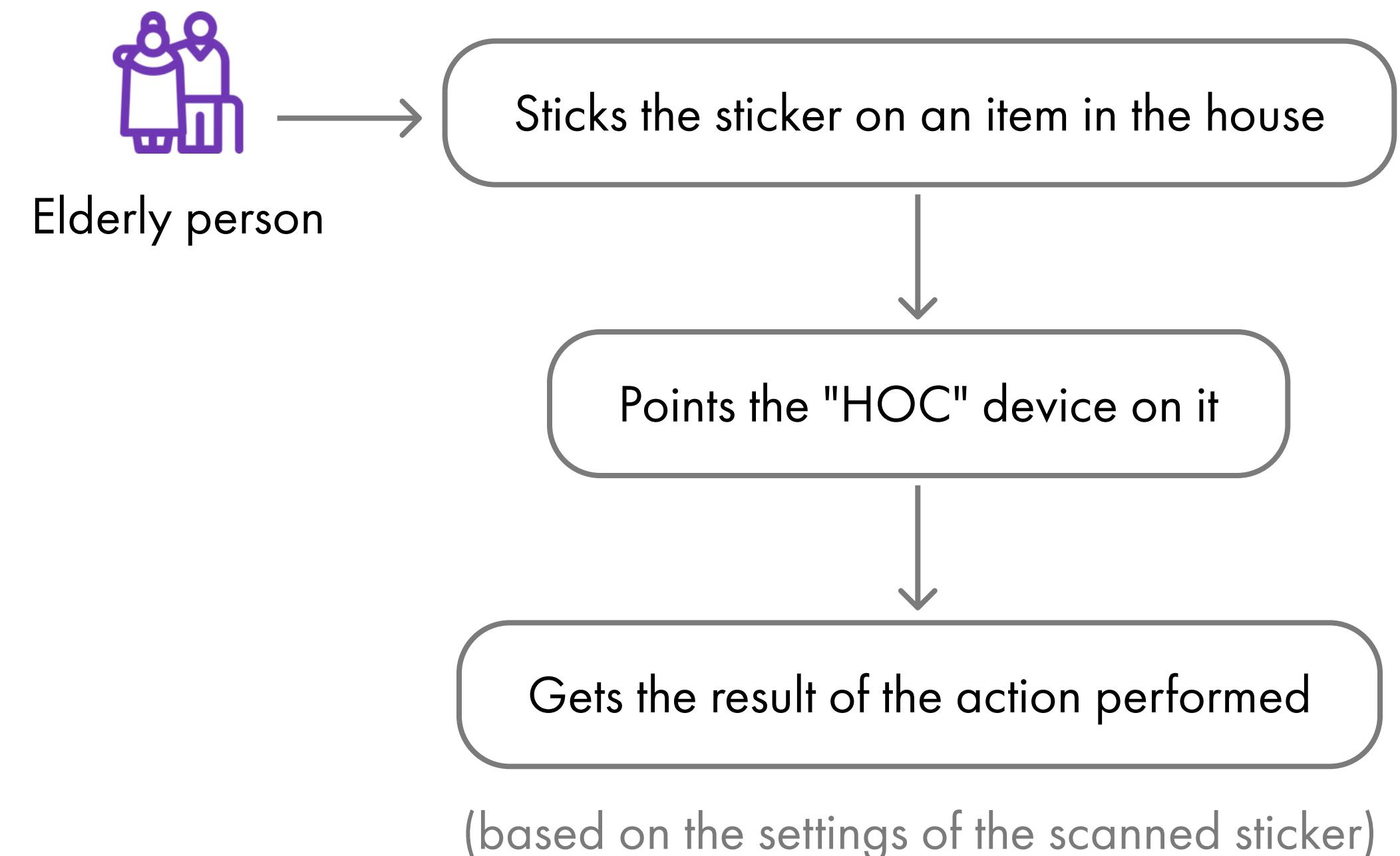
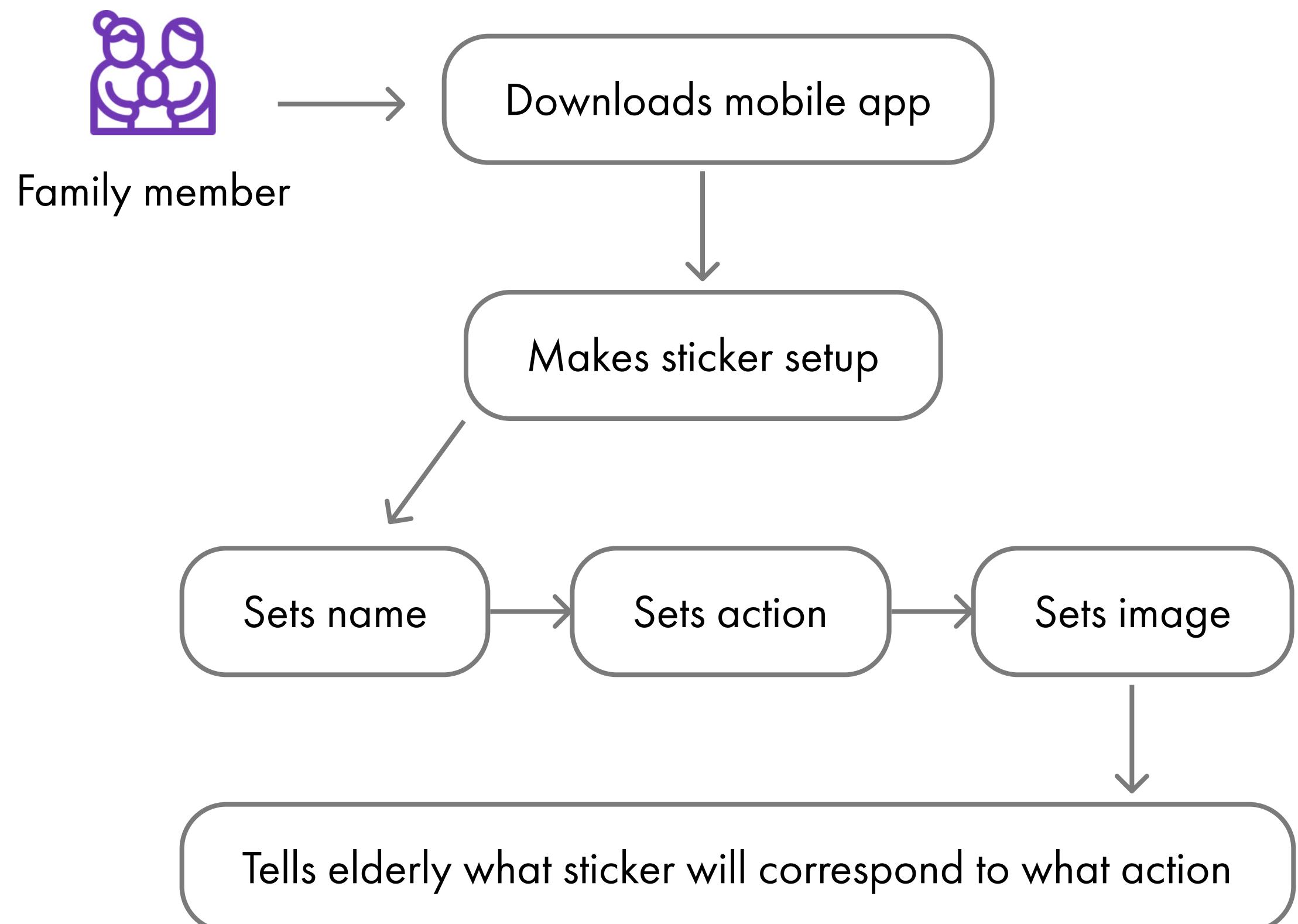
Identifying stickers
(for elderly)



Mobile application
(for family member)

Solution – UX Design

User workflow



Solution – UX Design

Personas



Luca

- ♂ 73 years old
- 🏠 Lives in Milan
- ⓘ Has some memory problems

Has at his disposal:

- Smart object (the HOC)
- Identifying stickers

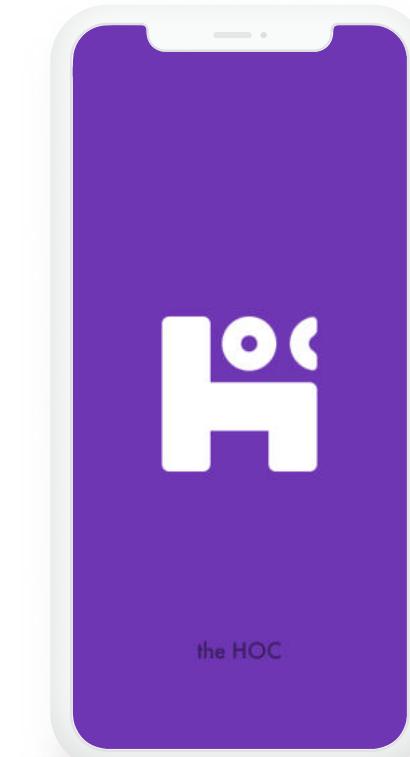


Andrea

- ♂ 42 years old
- 🏠 Lives in London
- ⓘ Son of Luca

Has at his disposal:

- Mobile application

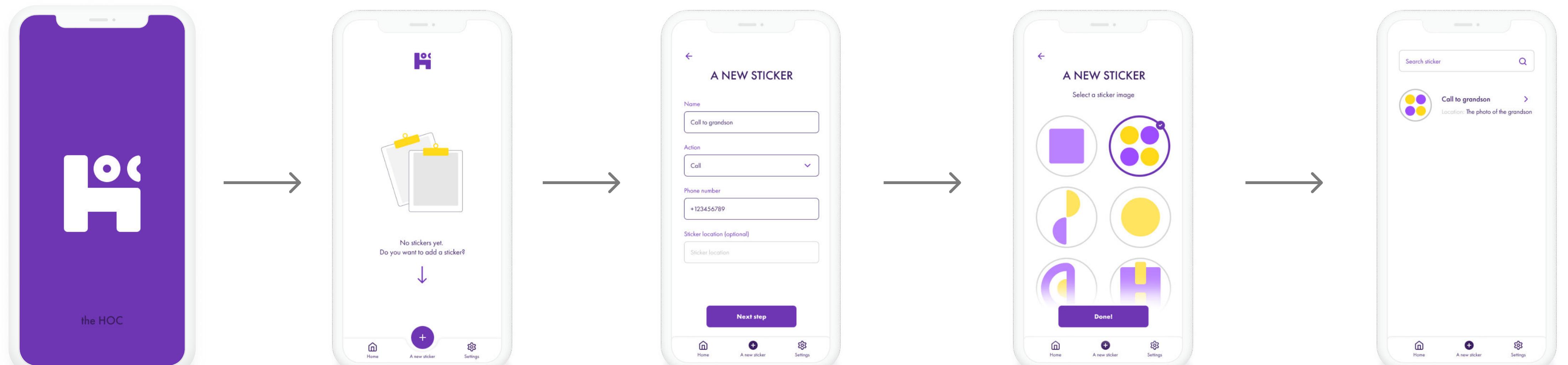


Solution – UX Design

Scenario 1 (Family member)



Finds out from his father that he needs help setting up the HOC.
He wants to get in touch with his grandson quicker.



Andrea launches
"The HOC" mobile app

Clicks "A new sticker"
button

Setting up a sticker to
call the grandson

Selects the image of the sticker
that will perform the call

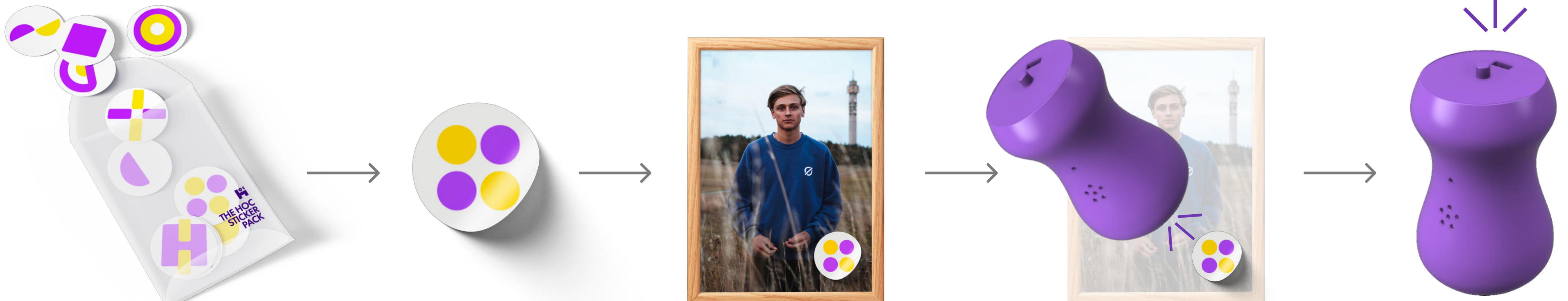
The sticker is ready to be
scanned by "the HOC"

Solution – UX Design

Scenario 2 (Elderly person)



Finds out from his son that now he can use the sticker with two purple and two yellow circles to call his grandson.



Luca takes a set of
"The HOC" stickers

Takes out a sticker with
two purple circles and
two yellow ones

Puts a sticker on his
grandson's photo

Points "The HOC" device
at the sticker, thereby
scanning it

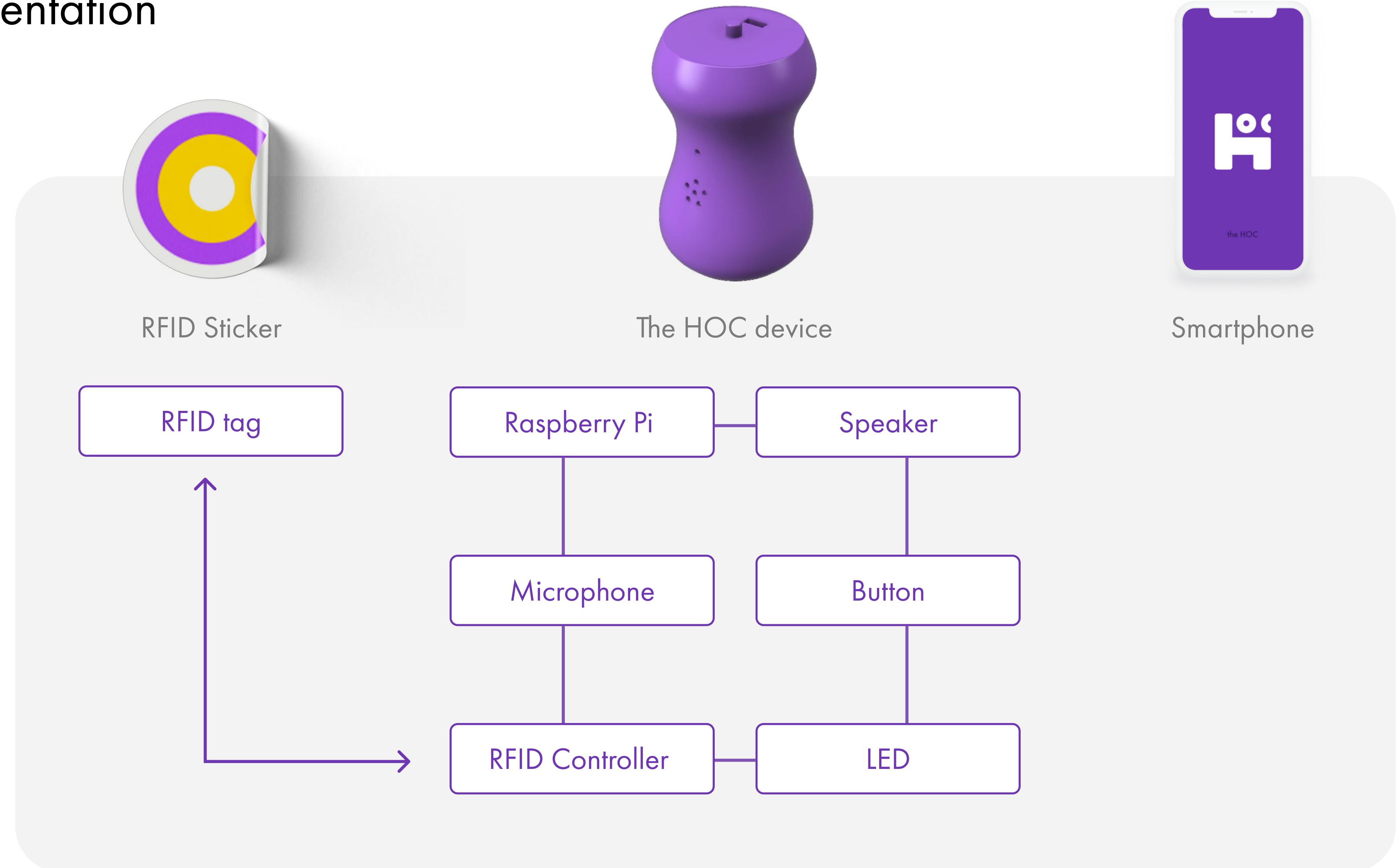
The smart object calls Luca's
grandson. The conversation
has begun!

Solution – Implementation

HW architecture

Tools:

- Raspberry Pi
- Cable of Raspberry
- RFID Stickers
- RFID Controller/Reader
- Cables
- Battery
- Speaker
- LED
- Confirmation button
- Microphone

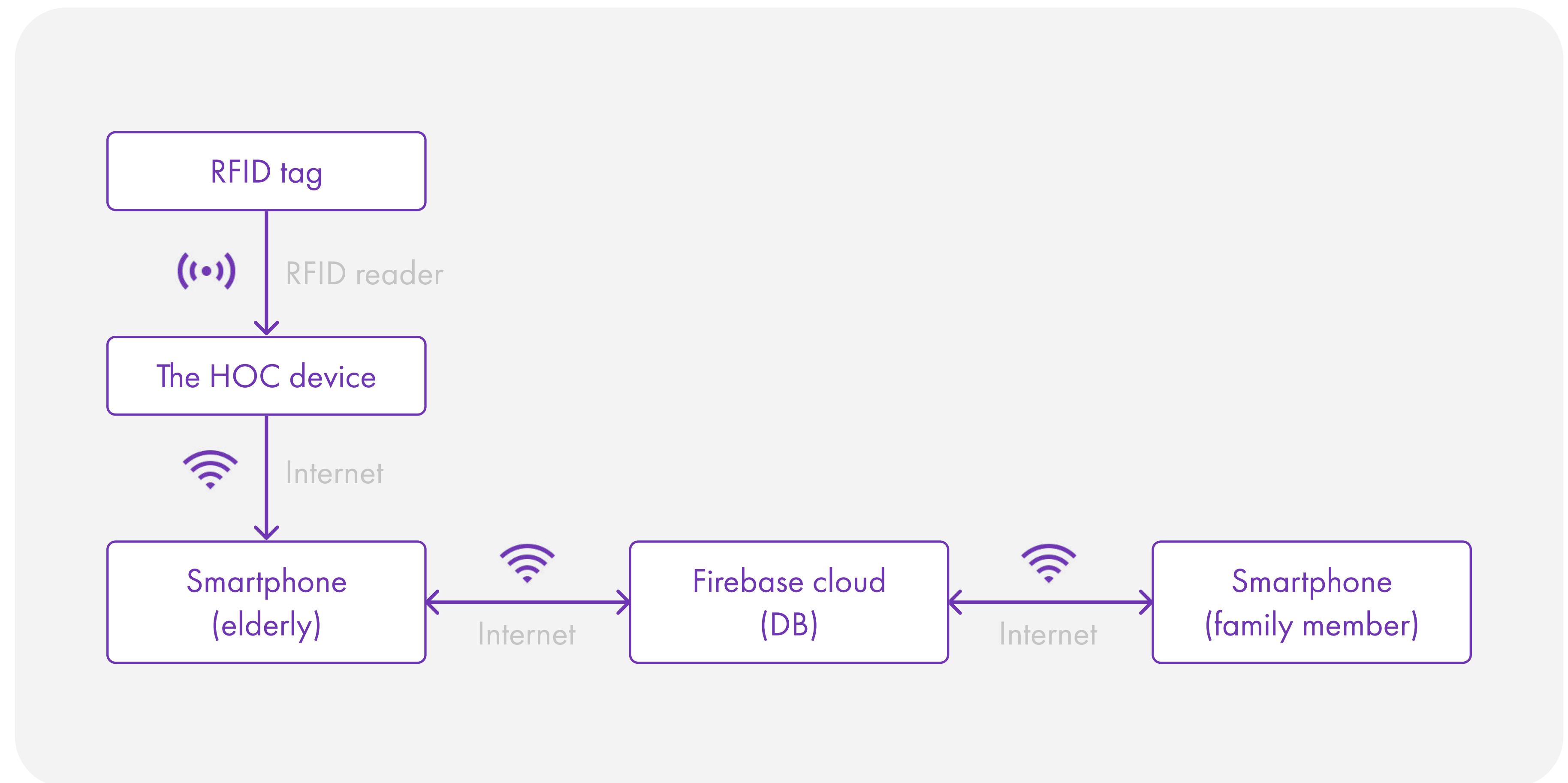


Solution – Implementation

SW architecture

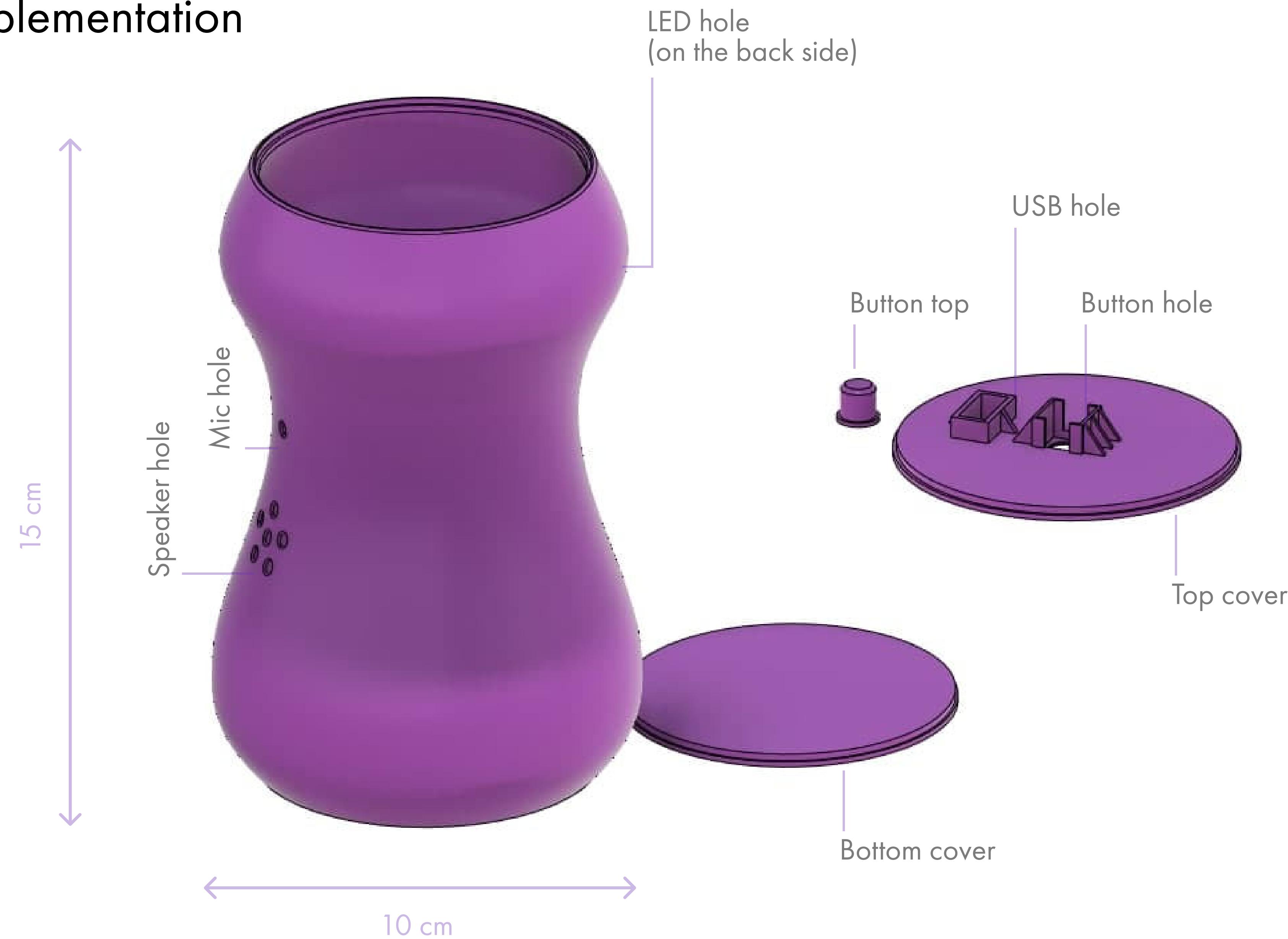
Tools:

- Android Studio
- Firebase Database
- Github Desktop
- Figma
- Autodesk Fusion 360
- Bash linux
- Python
- Java
- SQL
- XML



Solution – Implementation

3D model



Solution – Implementation

Mobile application structure

Login

Login

Choosing a role

- Family member
- Elderly

Instructions

Onboarding pages

- For elderly:
how to use the device
- For family member:
how to use the mobile app

Main screen

Add a new sticker

- Call
- Music
- Clock
- Alarm
- Calendar
- Weather

Settings

Settings

- Language
- Notifications
- Technical support
- Log out

Tasks

Add a new task

- For today
- For tomorrow
- Coming soon

Calendar

Calendar

- List of tasks depending on
the selected day

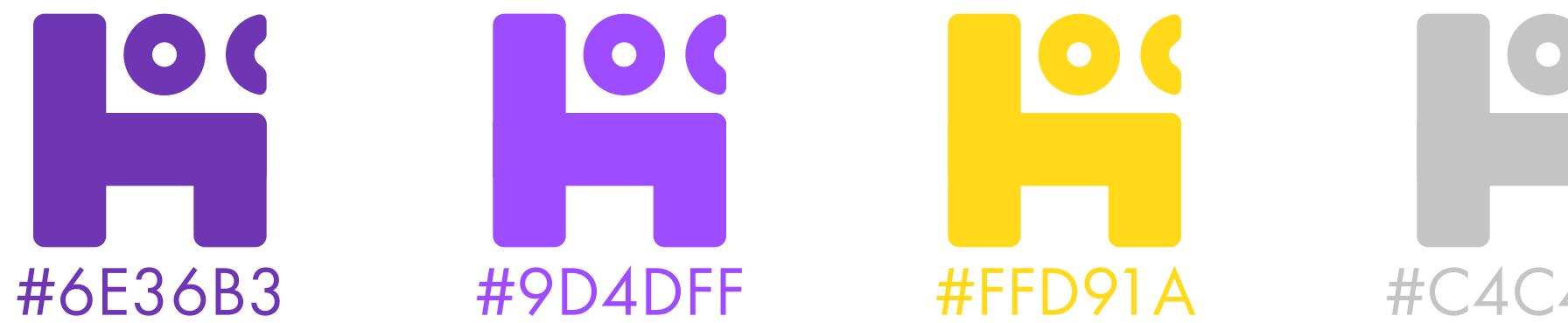
Edit a sticker

- Change the name
- Change the function
- Change the sticker
- Delete the sticker

Solution – Implementation

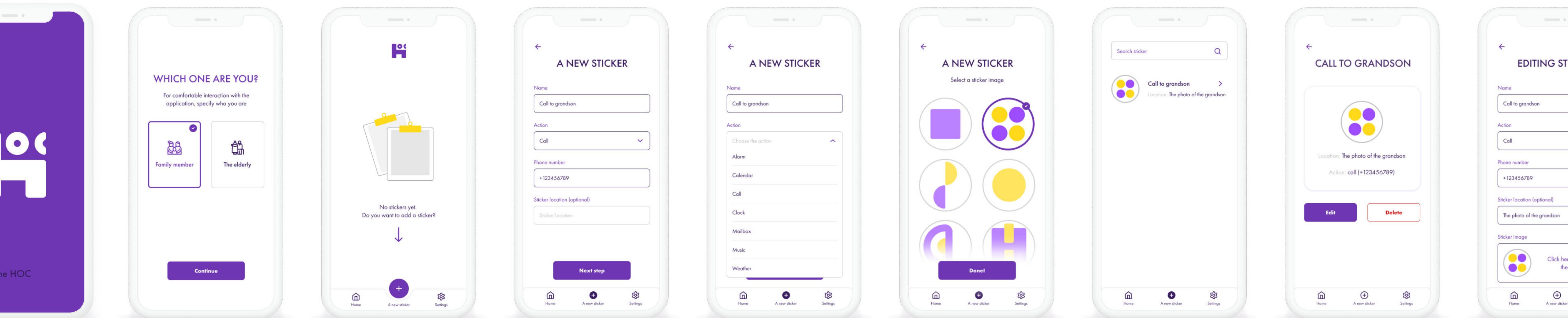
Mobile application design

Color palette



Font

Futura PT
Bold Medium Book



Future work



Print and use a 3D
model of the device



Improving call
processing



Auto-refresh in
each activity (app)



More RFID stickers



Cross-platform app
(an iOS version)