

# foto

An IoT  
Touchpoint

→ to Better  
Connect with  
my Nanna



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## who is foto for?



Nanna and Lola, 2020

My Nanna, 74, lives alone with her dog Lola. Since moving to university, I feel less connected with Nanna. We worry about her feeling disconnected from the family - this is exasperated by COVID-19.

I asked her how she could feel better connected with us. Nanna would like an easy way to say hi and to "share photos of stuff like Lola being silly", with her family and closest friends. Myself and my family would like to keep more regular contact with her, and Nanna said she'd love a vision of our day to day lives, without intruding on them.

But, she is a 'technophobe'. Using a lot of modern technology, with their many steps and functions, causes her real stress and anxiety - so she doesn't have any.

**How might we create a platform for modern sharing, of photo and voice messages, for someone who finds using technology daunting?**

**foto** allows an elderly relative to simply share a **moment** (📷 + 🗣).

## send

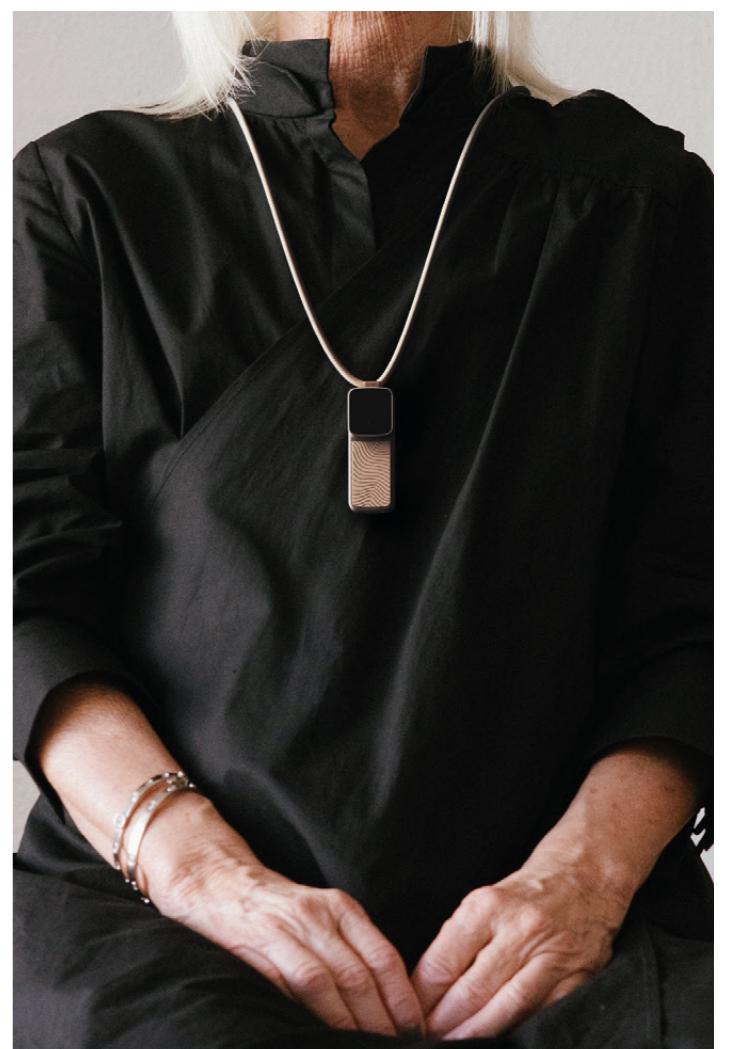
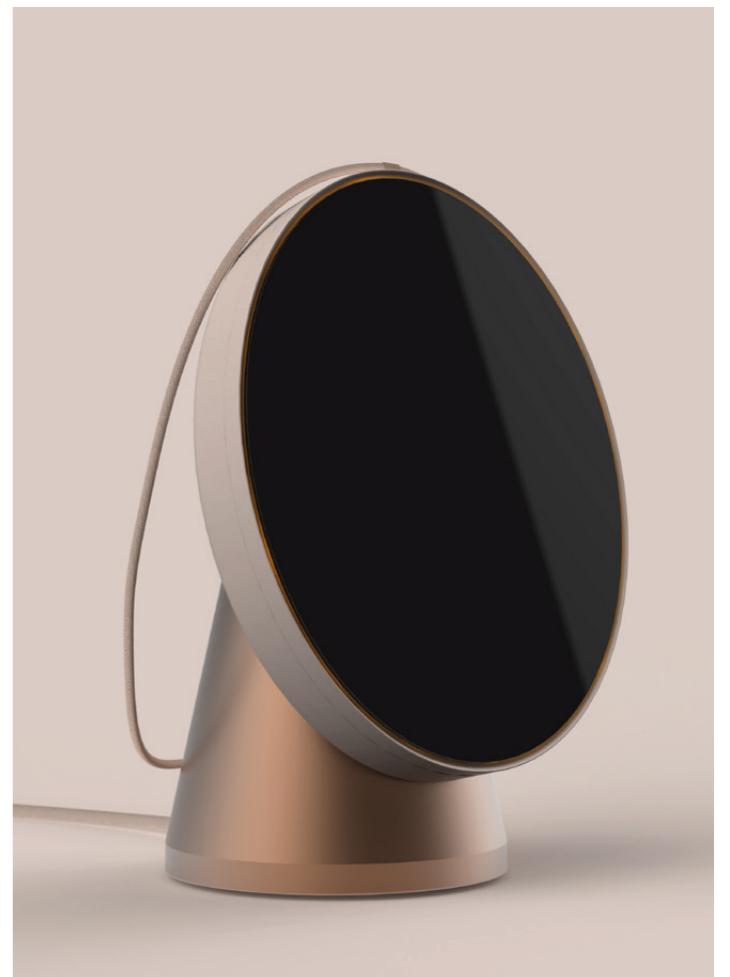
The **camera** is worn around the neck. The single button captures a **moment** - a photo with a voice message. Once docked in the **frame**, captured moments can be sent to a set of close contacts, through a single touch.

Family and close friends use the **foto app** or their own **frame** to receive moments.

## receive

The **app** can be used by family and close friends to send moments back.

The **frame** unintrusively glows around the edge of the screen when a new **moment** is received. The **moment** is viewed using its simple UI and can be marked as a favourite. The **frame** shows favourite moments passive throughout the day.



<sup>1</sup>Oval touch-screen of the **frame**, uses a specially designed simple touch UI, complimented by a voice assistant, minimising the steps for any action. Family/friends complete the initial setup and can additionally control settings on the **app**.

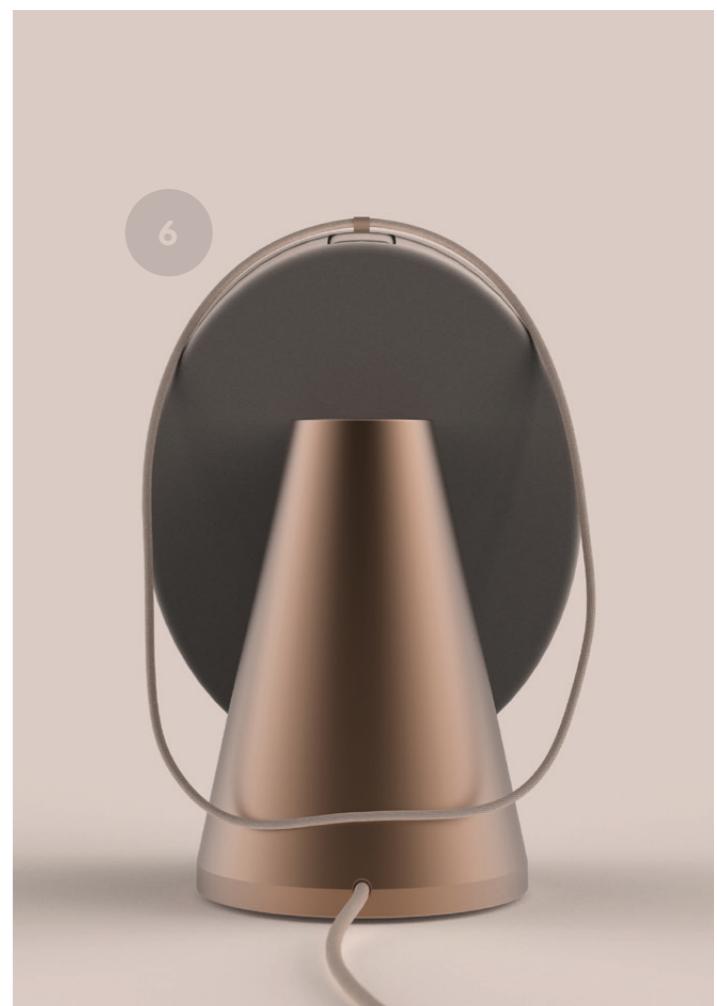
<sup>2</sup>Through calm colour, material and finishing choices, and the simple physical shapes of both products, the **frame** and **camera** are friendly and approachable. A modern and high-quality aesthetic avoids the medical or toy-like look of most elderly specific products.

<sup>3</sup>A playful texture for the **camera** grip helps add friendliness, and is used again on the top of the **frame's** base to unify the two products.

<sup>4</sup>Fabric neck strap for quick, easy, operation.

<sup>5</sup>Holding the single button starts capturing audio and a video. The best photo from this clip is intelligently selected before its sent.

<sup>6</sup>The **camera** docks into the frame at the top, covering the lens and meaning the neck strap drapes neatly behind. Easy charging and downloading photos.



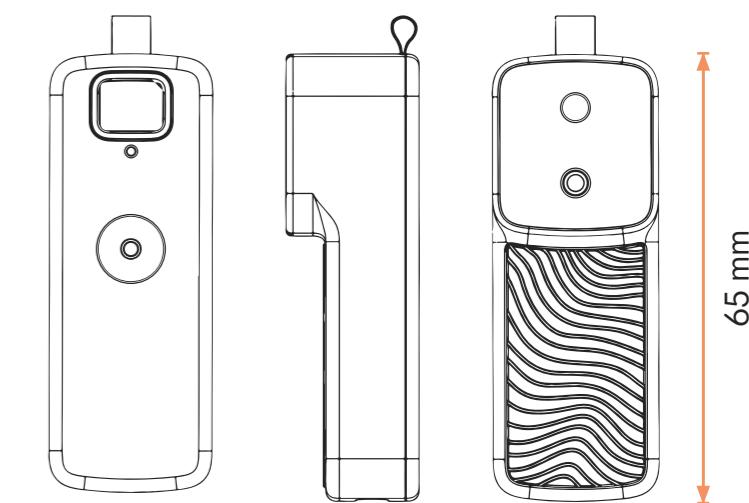
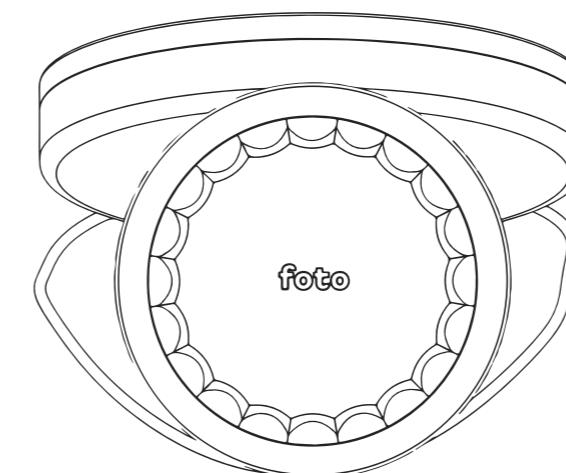
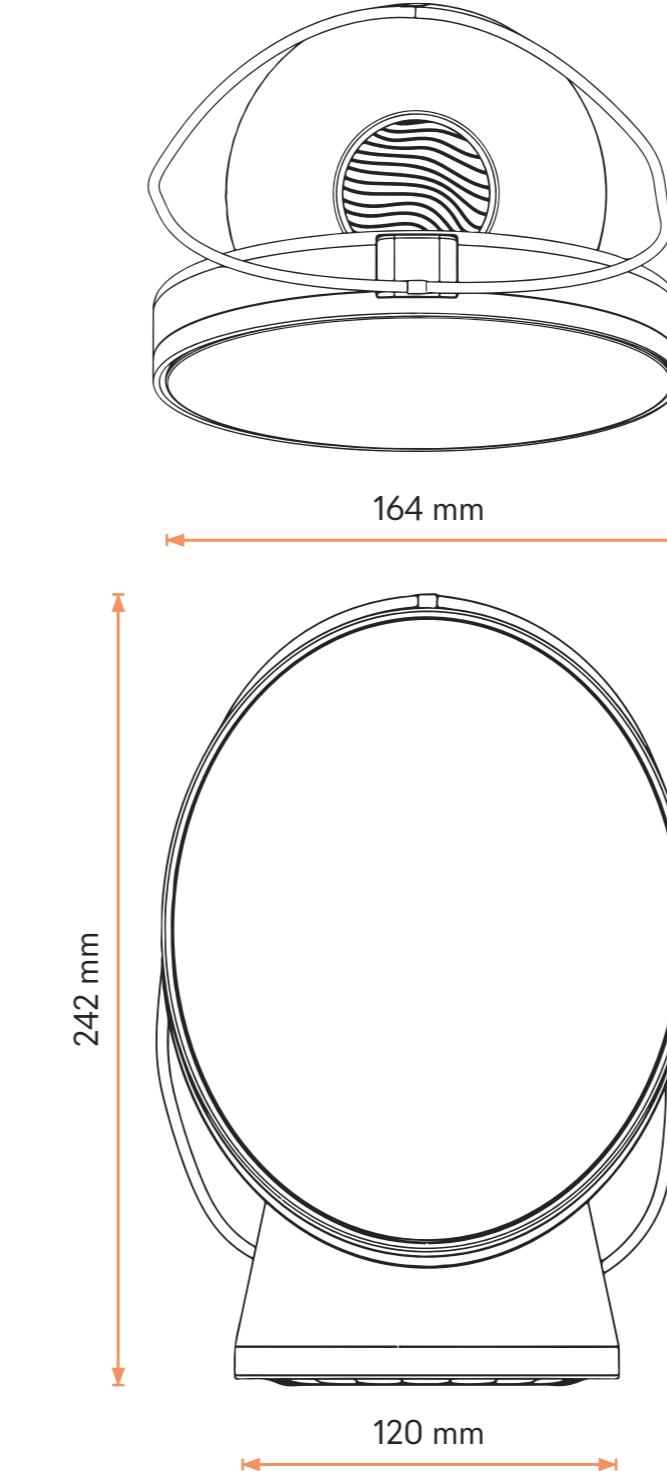
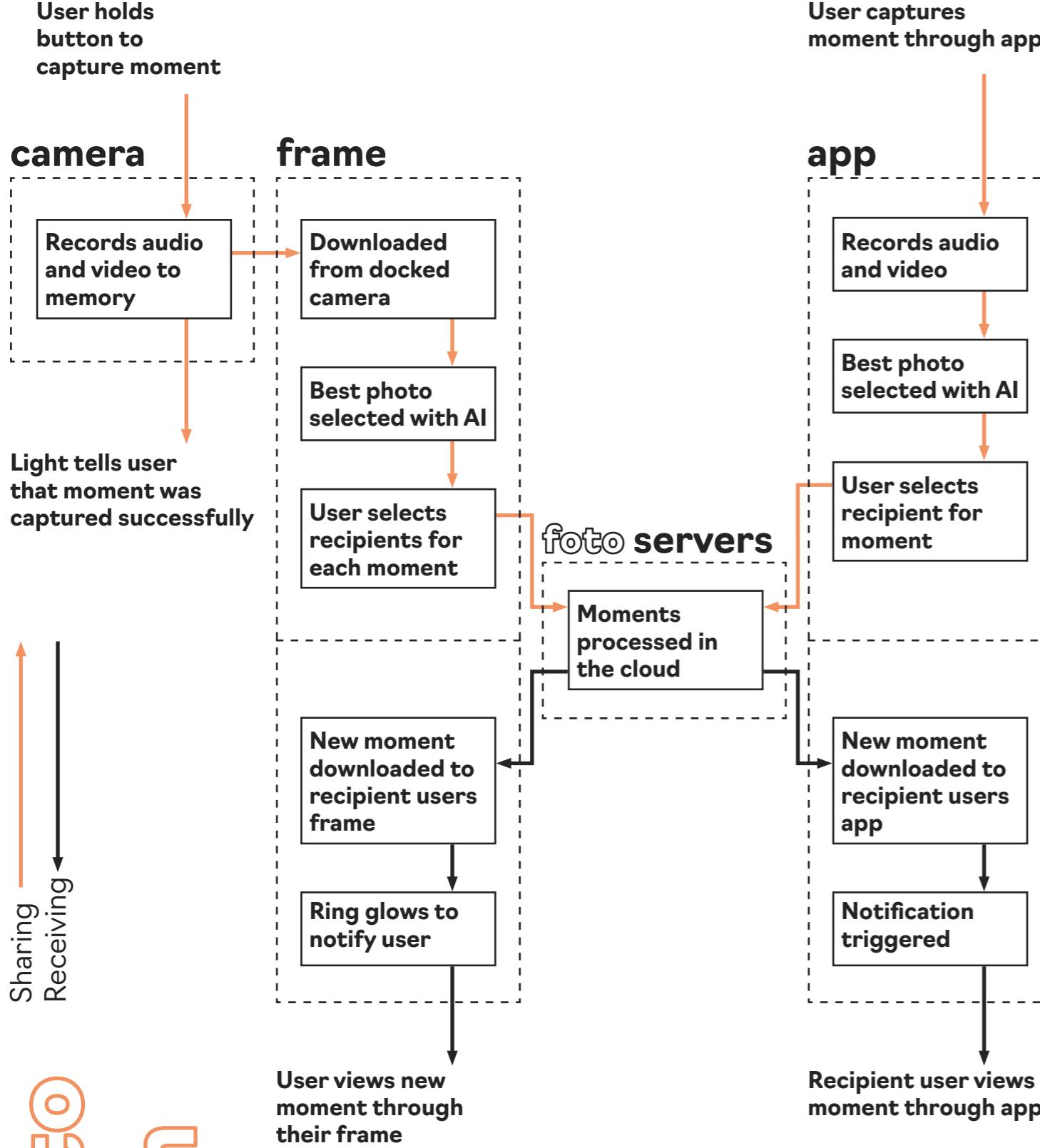
## from nanna



## to nanna



# the foto system





## nanna's relationship with technology

Nanna has a low concentration span and like many, feels she has slowed with age. She therefore finds learning new processes difficult, quickly forgetting them.

"the more that's staring at you the more it muddles my brain, then I get anxiety and that's what switches it off" - Nanna, 2021

The solution should require minimal steps to operate, and have almost no learning curve - completely intuitive.

## creating connection

Nanna's currently connects through traditional methods and the phone. Family is busy working / studying day-to-day - Nanna loves hearing from them but doesn't want to intrude. Nanna also values her peace and quiet and doesn't want a device to intrude too much. Her Family wants to keep in contact more fluidly, also sharing photos with her, similar to their online instant messaging.

The solution should enable unintrusive communication, where multi-media can be shared and responded to at a recipient's convenience.

## ideation

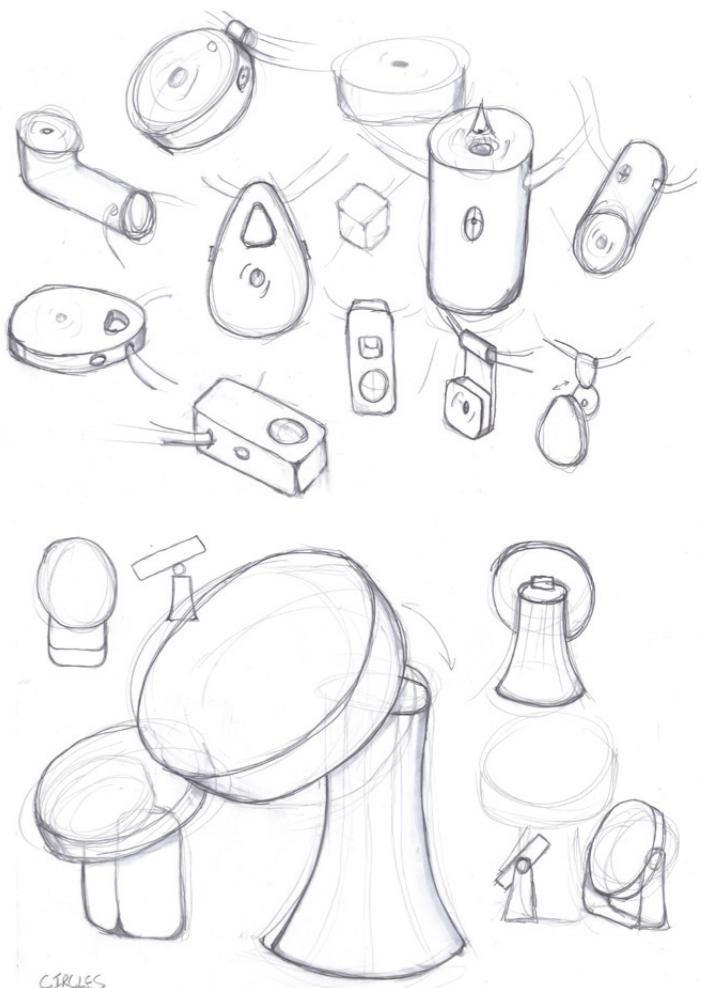
Following initial divergent sketching, and discussion with peers an outline of a solution was defined:

An accessible camera and a separated display, used to exchange 'moments' - a combination of a photo and voice audio.

The feature-set was then explored and refined through morphological analysis, shown below.

From the morphological analysis:

Nanna wanted a static, standalone device that she could use placed on a surface and imagined using it in her lounge or perhaps by her bed. Voice-control is easiest but it was important to her that this was only listening when activated. She would like an ambient slideshow with subtle, unintrusive lights for new messages. Nanna liked the idea of wearing the camera around her neck and wanted a viewfinder.

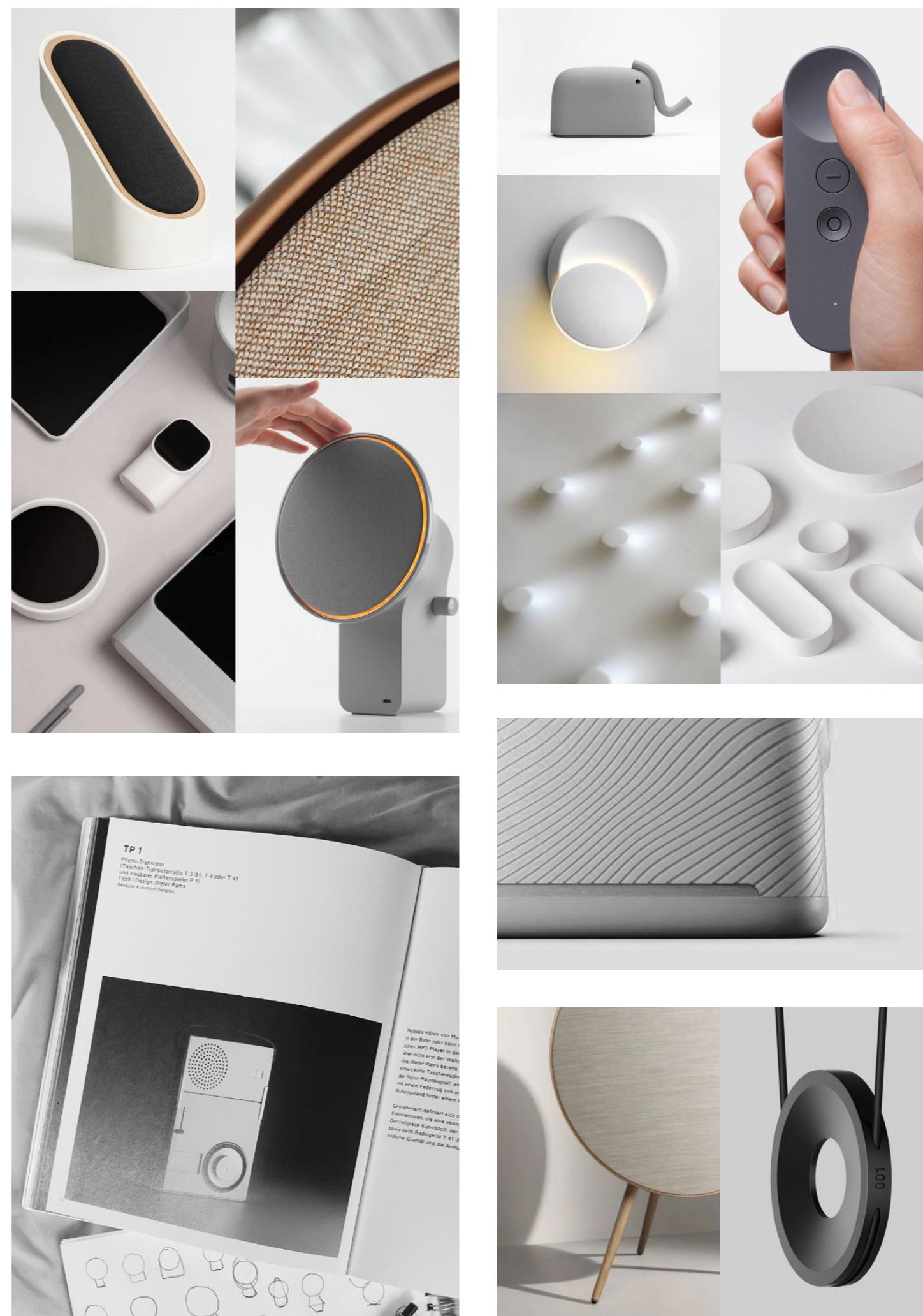


Visual	TV	WALL PHOTO FRAME	3D DYNAMIC ART	STANDALONE	PROJECTOR
Interaction	BUTTONS	ON-SCREEN BUTTONS	REMOTE	VOICE - CONTROLLED	PRESSURE-SENSITIVE TOUCH
Notification	AMBIENT DISPLAY	"OLICE'S SENT YOU AN IMAGE"	FRIENDLY NOTIF	CHIME	LIGHT-UP HIGHLIGHT
Camera	WEARABLE	POCKET MAGNIFYING STYLE	ERGO - HANDHELD	BINOCULARS	WITH SCREEN

The colour, materials and finishes (CMF), and physical form of the product are used to make it friendly, approachable and not overwhelming, but also desirable. Pinterest [1] and lemanoosh [2] websites, and 'Less and More: The design Ethos of Dieter Rams' [3] book were used to collect images for a mood-board of inspiration.



# design inspiration



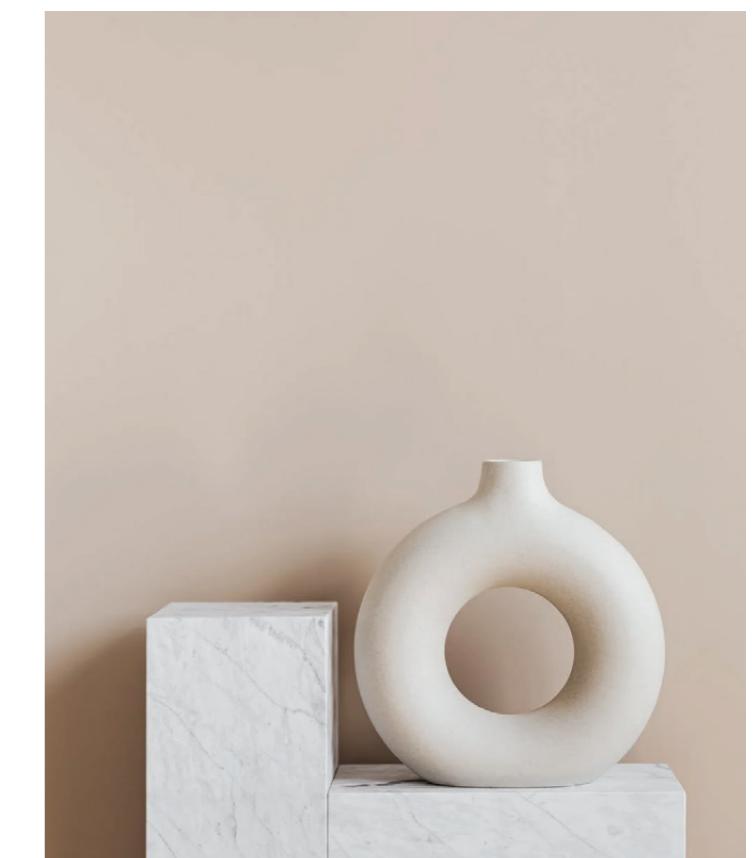
Simple shapes with soft edges were explored. Circular elements create a more friendly appearance.

CMF was kept calm and minimalist but also high-end. Although the product would be aimed at both sexes, this would likely involve multiple colour-ways. Therefore for now a slightly more feminine bronze tone was developed.

For elderly-specific products form often follows function, producing a very medical product. This makes the user feel particularly old, and worry about what onlookers might think. The product will avoid this with a young but classy design balanced with its function.

Playful elements add to the friendliness of the device, but this can be taken too far, so should be added tastefully.

The product should not appear 'techy' as this could make it more overwhelming for Nanna. It should be approachable, maybe even familiar. Although, it should also be honest - not hiding its function.



# design process

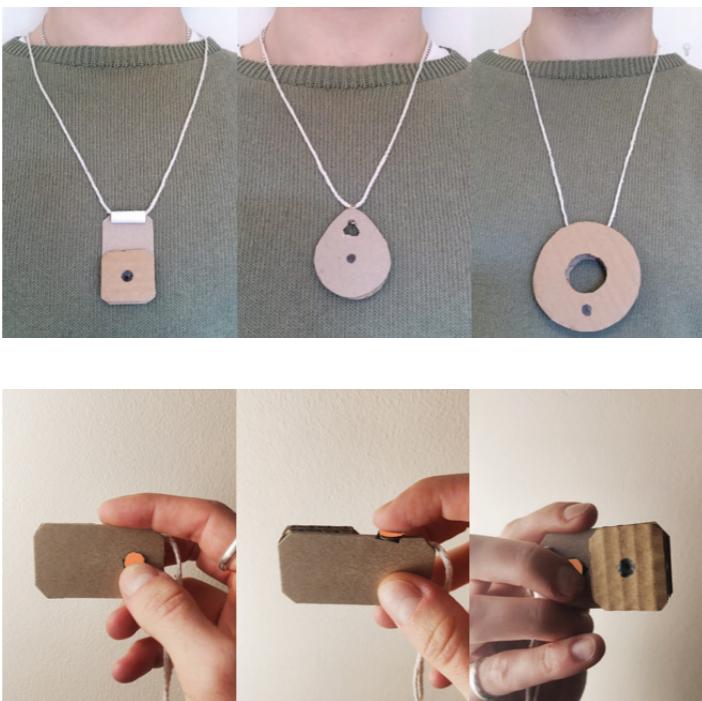
## simple control

The **camera** was purposely designed to have minimal functionality - avoiding being overwhelming. By using AI to select the best photo (similar to an iPhone's live view), the user can simply hold the button and speak their message. It has a viewfinder (requested by Nanna) to roughly line up the photo and a single button. An LED provides confirmation that the moment was captured.

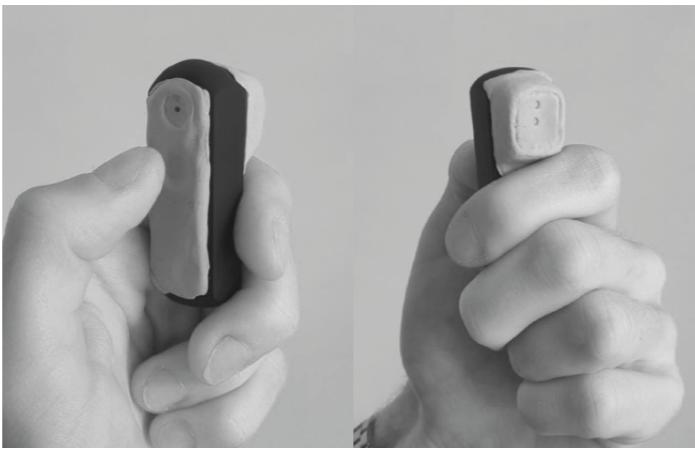
The **frame** uses a touch-screen and voice user interface only, for control - the device is switched on from the wall. The UI would be extremely simplified, requiring only one or two touches to complete an action. The VUI would compliment this but not completely replace any action. The UI would be as learnable and memorable as possible. The full design for this would require significant testing, so is beyond the scope of this project.

The camera docks into the frame for easy charging and transferring moments before sending. Docking means the small device is less likely to get miss-placed.

## lofi testing

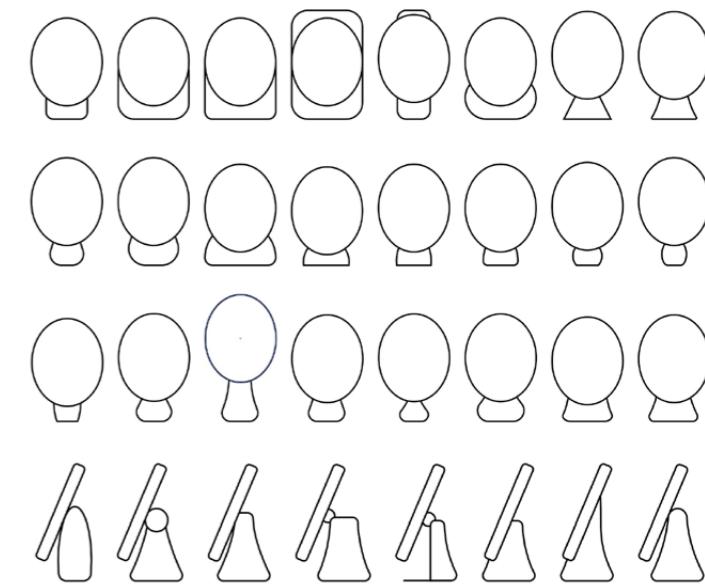
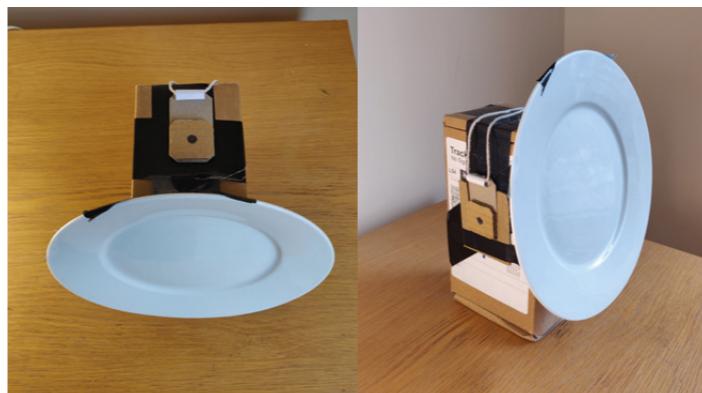


For the **camera** several through-hole viewfinders were tested - but it was decided it needed magnifier. Back button placement was best, being ambidextrous and most comfy. The grip was also tested with a glove simulating arthritis - taped at each finger joint.



Further lofi prototyping tested a later design. The notch purposely makes it difficult to cover the lens. The strap moved to top so operation was a single movement, from hanging.

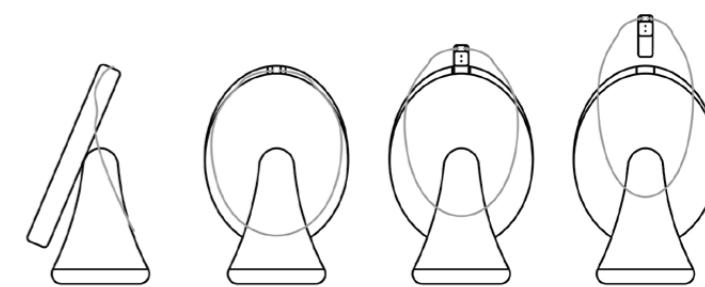
LoFi prototyping for the **frame** tested aesthetic and docking positions. Further form exploration was needed for the base, but the circular display was successful and should be included despite the cost this would incur. Top and side docking gave the easiest access.



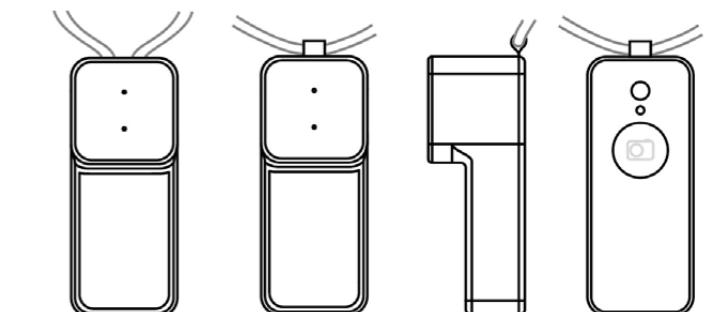
The frame was changed from circular to a 4:5 oval to give it more distinction and to suit portrait phone photography.

## familiar, friendly form

Exploration of form for both devices continued with quick sketching and illustrator and then further into CAD.

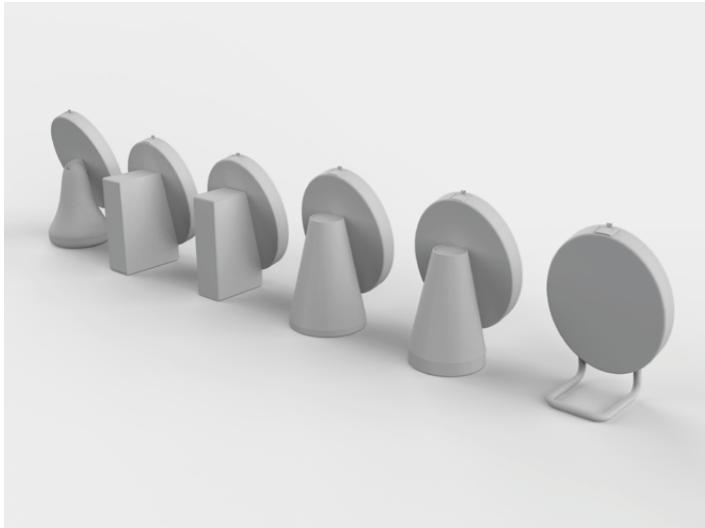


The dock was moved to the edge of screen, with necklace draping around the back. This also covers camera lens, while it is docked at home, making it private by design.

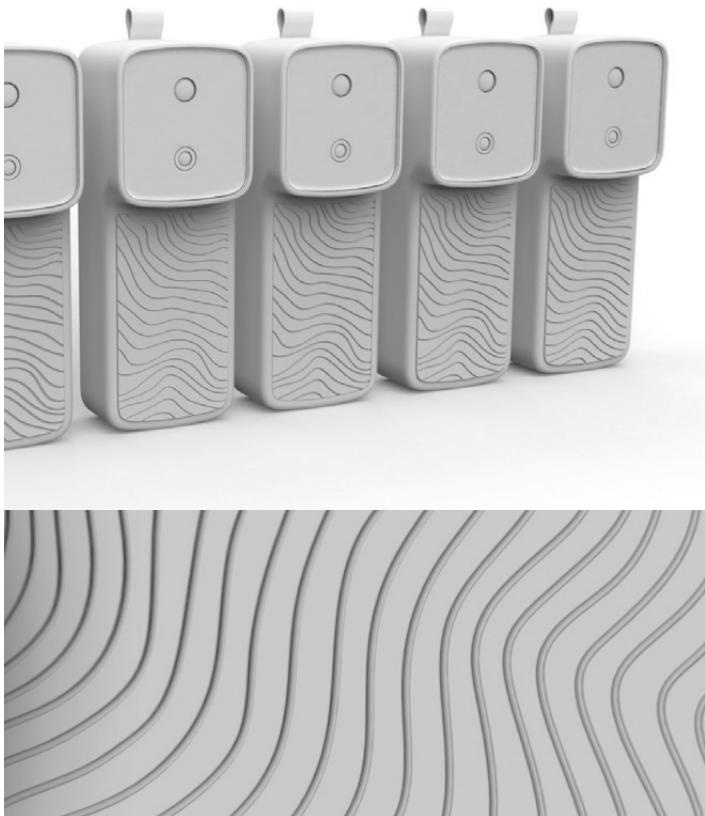


## cad refinement

Building the model of the camera and frame in CAD provided the best perspective to refine form. Several base shapes were tried for the frame. Although the internal components were not fully defined in this project, their approximate size as well as design for manufacture and assembly were considered when designing both parts.



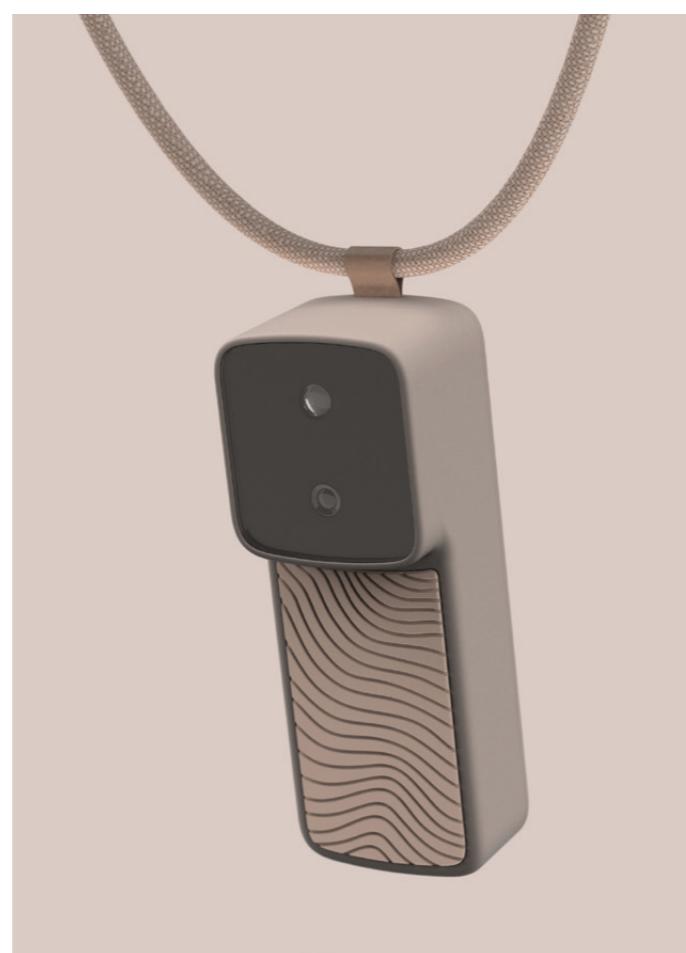
Refinement of the wave texture - used on the front of the camera and top of the frame's base - focussed on making it soft but playful.



bronze

## cmf 01 - bronze

For the first CMF of foto: A machined aluminium was selected for the base, with an anodised bronze tone. Soft touch plastic in a complementary colour was used for the screen surrounds and camera casing. A soft rubber was used for the textured inserts. The woven cable matches the lanyard, held on by a tan leather tab.



## references

1. Pinterest. Oliver's AID CMF Board. Available from: <https://pin.it/jFWsI71> [Accessed 25th March 2021].
2. Lemanooosh. Industrial Design Trends, Jobs and Online Courses. Available from: <https://lemanooosh.com/> [ Accessed 25th March 2021].
3. Ueki-Polet K, Klemp K. Less and more: the design ethos of Dieter Rams. Berlin: Gestalten; 2009.

