

Appendix

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Metaphoric Interfaces:
A case study for the digitally enabled
luxury kitchen

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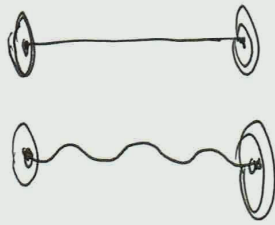
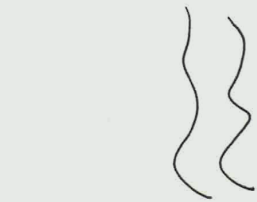
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APPENDIX I

How can the user experience
the state of the dish using
new senses?

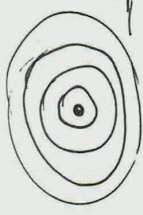


liqued

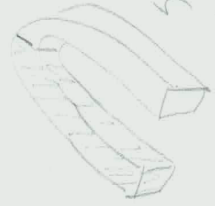


Tops ~~get~~ hard stiffer when
almost ready

smelling when pouring
moving live flames



hot fire
low fire

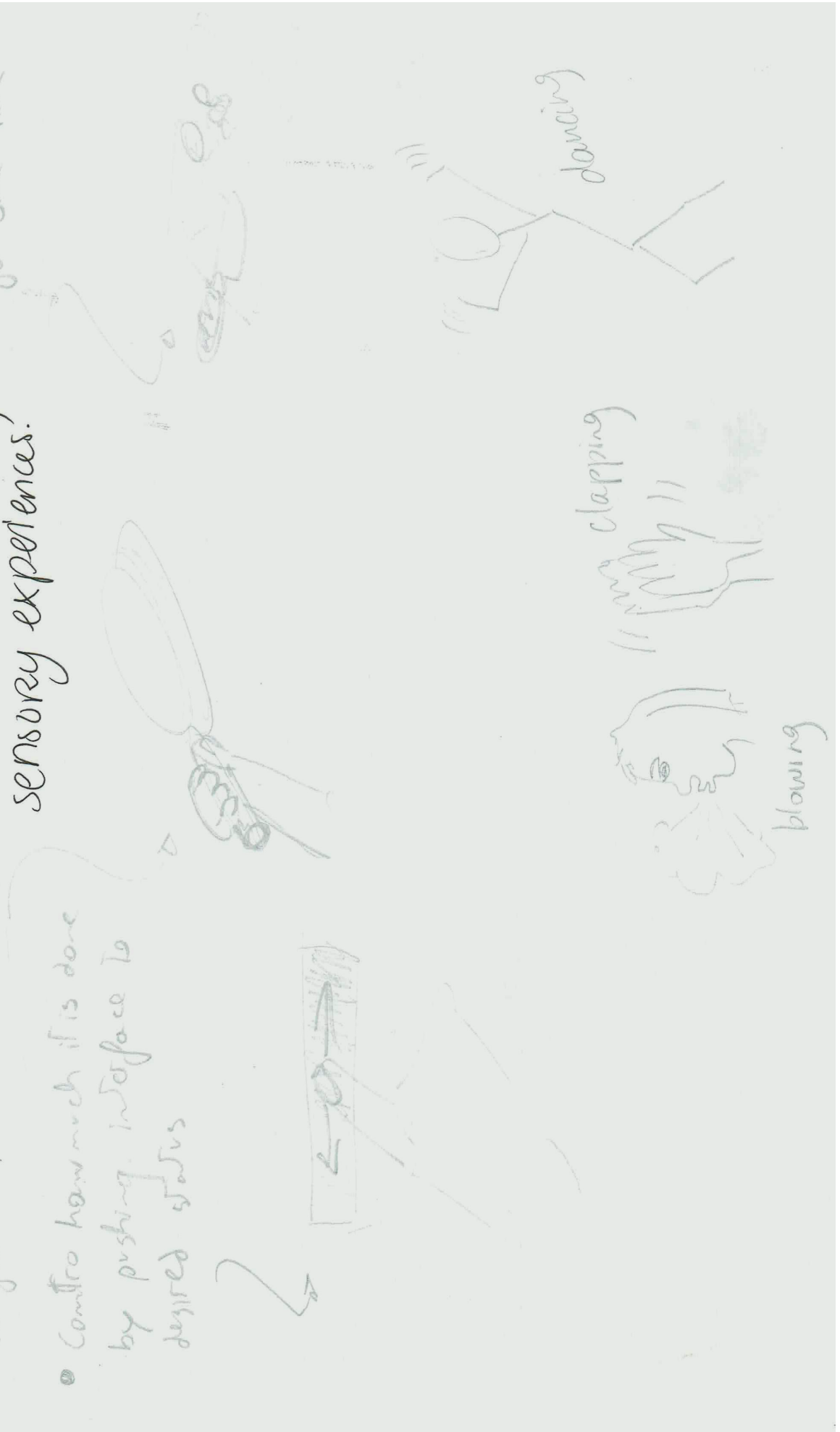


something
with magnets

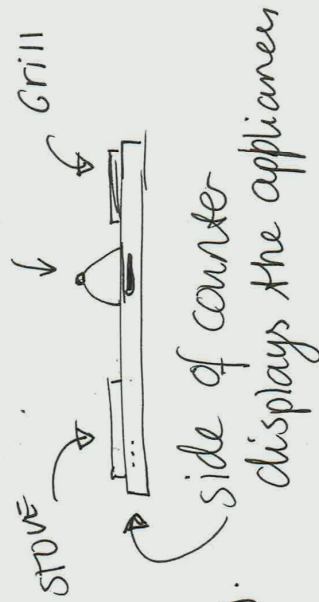
How can I control the appliance using new sensory experiences?

- o Position haptic to a handle from "pan or mixer" where you feel how much it is done.
- o Control how much it is done by pushing. Interface to desired status

- o Hold pots or cutter to put ingredients for some time



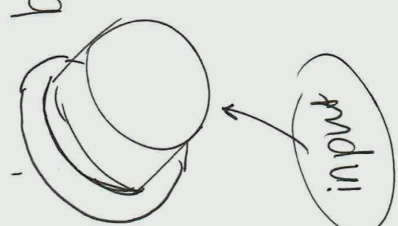
Which shape should
 haptic / other sensory experiences have?
 physical shape



connected to one display on counter



button that can be placed on the appliance you are using



How can tactile interfaces with the other senses (smell, visual...)

separating
components per ingredients

Visual? See what you
are touching

Making sorbet:
temperature
frozen through it is

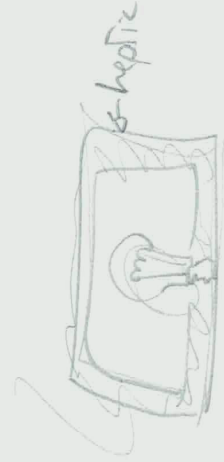
Temperature

Color

Feel
temperature
differences

To increase
size of
very slowly

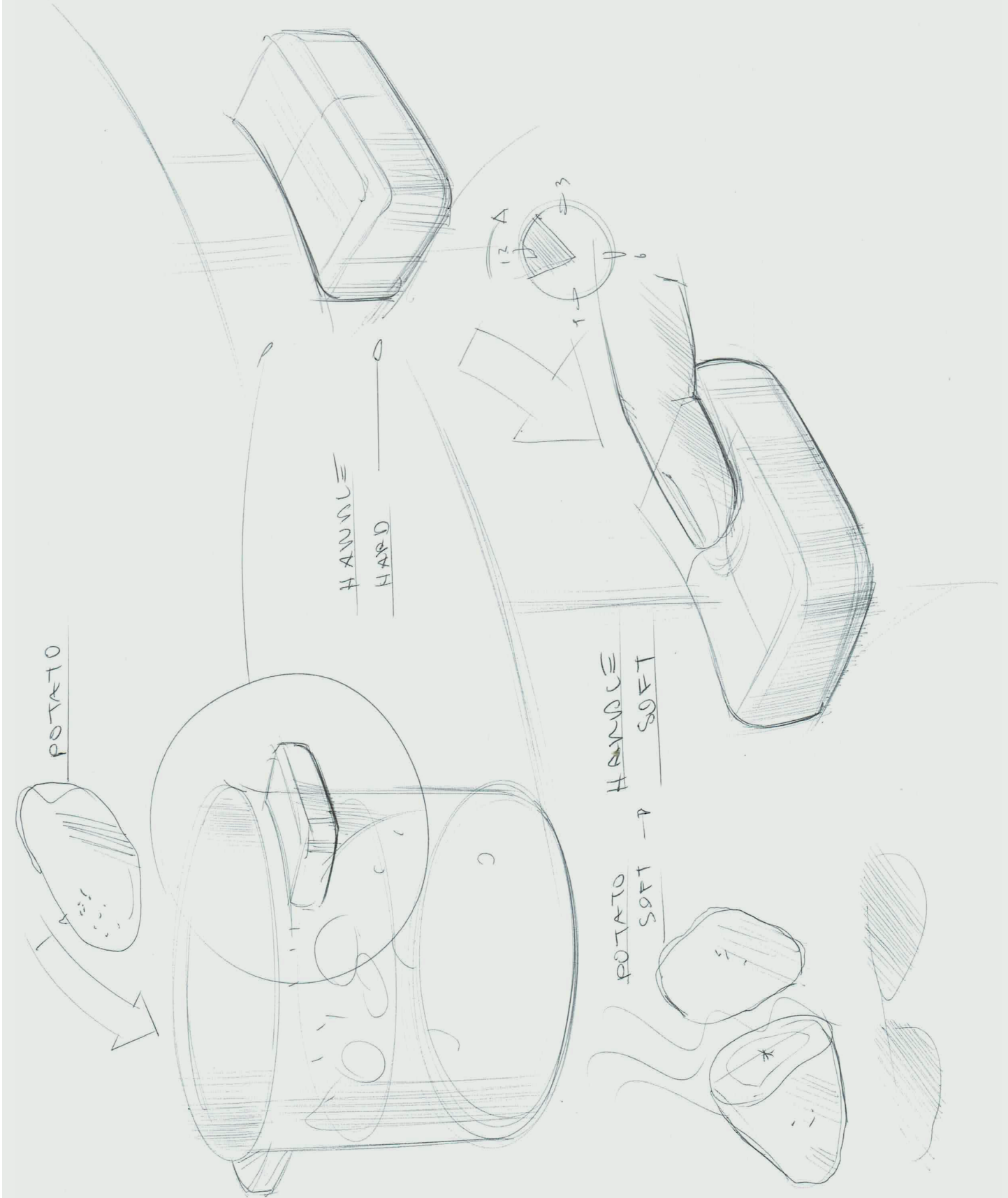
IT can glow from the
inside to show light,
light captures attention



Can heptics get warm too?

Can heptic get in contact somehow with ingredient
to absorb taste or smell.

Color light, food smells, food taste,
Temperature, Touching manipulation
of parameters



Palms.

- Burning the cake in the oven before it is totally baked.
- Boiling eggs, IT is hard to predict status of the inside
- Steak and vegies There is a big range of how much is done and the good result depends on the taste.
-

"With bread I would want to knock on it"

"People throw pasta on the wall to see if it sticks"

"Stick in the bread/cake to see if the dough still sticks"

APPENDIX II

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

meat
designed texture, "hardness"?

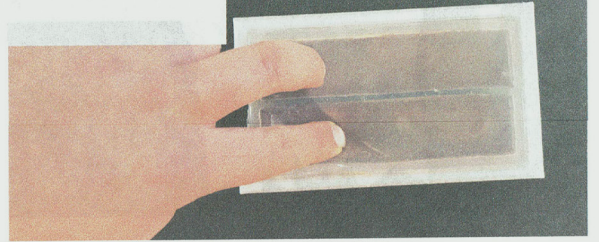
I experienced... (e.g. a sense or feeling of something, an emotion,...)

Can I/Can it...?

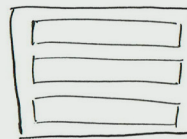
Can it show ^{me} ~~make~~ how it should feel and how it is right now?

- I wish I had something like this for... meat, cakes
- I would not like to use this because...

VISION #1



Other thoughts? Doodle?



I'd make three layers to check how each part of the dish is doing.

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

meat

I experienced... (e.g. a sense or feeling of something, an emotion,...)

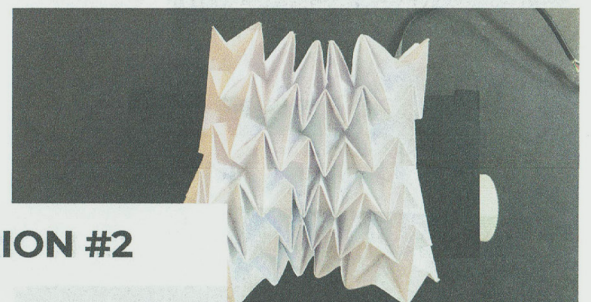
I felt like cooking meat.
I felt it's something that can really make my life in the kitchen easier.

Can I/Can it...?

Can I set ~~the~~ it to how I expect my food to be cooked and it tells me when it's ready?

- I wish I had something like this for... MEAT!
- I would not like to use this because...

Other thoughts? Doodle?



VISION #2

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Car stick.

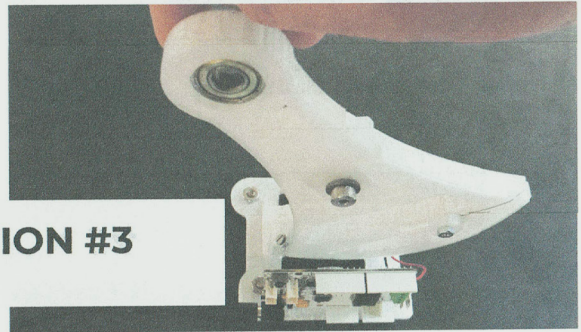
I experienced... (e.g. a sense or feeling of something, an emotion,...)

I was a bit confused.

Can I/Can it... ?

- I wish I had something like this for... spices. consistency of food. Temperature.
- I would not like to use this because...

VISION #3



Other thoughts? Doodle?

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Dimmer

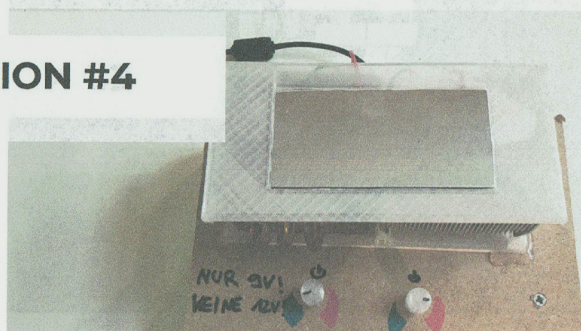
I experienced... (e.g. a sense or feeling of something, an emotion,...)

Can I/Can it... ?

~~Can it be used to change temperature~~

- I wish I had something like this for... my oven / stove
- I would not like to use this because...

VISION #4



Other thoughts? Doodle?

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

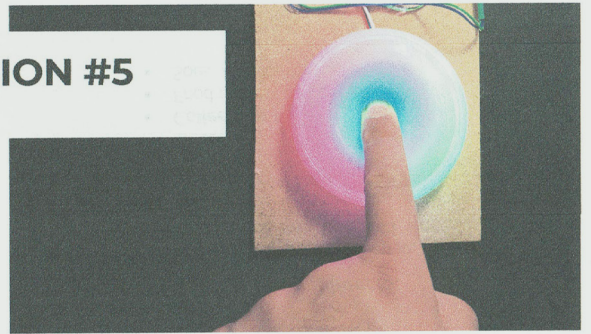
I experienced... (e.g. a sense or feeling of something, an emotion,...)

*Happiness ☺
Excitement.*

Can I/Can it... ?

- I wish I had something like this for cooking in the oven. Perfect for bread.*
- I would not like to use this because...*

VISION #5



Other thoughts? Doodle?

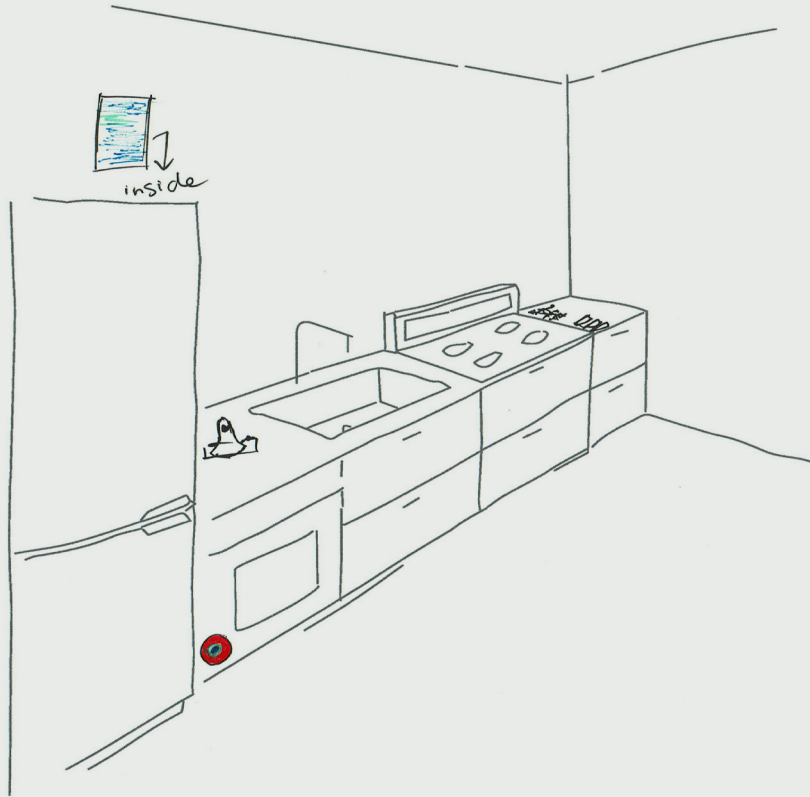
Colors from blue to red.

Additional thoughts:

List of common appliances:

- Stove (Electric, Gas, Induction, Ceramic matrix,...)
- Oven (Electrical, wood-fired, stone,...)
- Microwave oven
- Grill (Electrical, Gas)
- Fridge
- Freezer
- Coffee maker
- Food processor
- Sous-vide cooker

Please feel free to use this template to visualize your thoughts:



Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Scrubblade ü, when you said stake that sounded logical too.

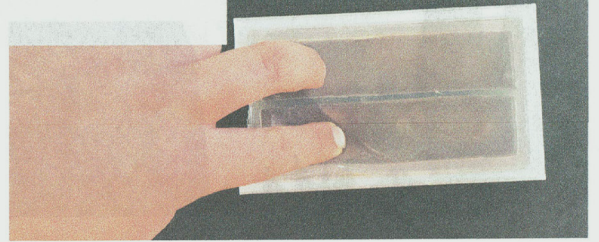
I experienced... (e.g. a sense or feeling of something, an emotion,...)

a bit of disgust because of the silicone, curiosity, confusion

Can I/Can it...?

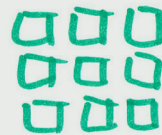
- I wish I had something like this for...
- I would not like to use this because...

VISION #1



Other thoughts? Doodle?

I like the idea of having smaller squares that can do the same, bigger display - more info



Jahna

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

an animal that I am stroking / a fabric, beautiful

I experienced... (e.g. a sense or feeling of something, an emotion,...)

a sense of control, compassion and empathy

Can I/Can it...?

fy? Can it tell me whether stuff goes bad in the fridge? ü

- I wish I had something like this for... controlling my dough ü
- I would not like to use this because...

Other thoughts? Doodle?



VISION #2

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

a scale at first glance, later

I experienced... (e.g. a sense or feeling of something, an emotion,...)

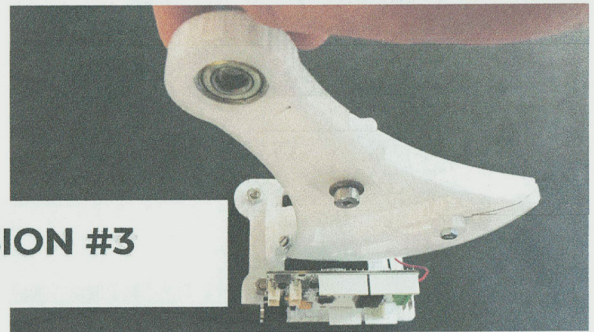
resistance, small fight, ~~to~~ aliveness

Can I/Can it...?

Do 360° rounds?

- I wish I had something like this for...
- I would not like to use this because...

control by
the oven
and stove
temperature



VISION #3

Other thoughts? Doodle?

This was my favorite

Johanna

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

a stove

I experienced... (e.g. a sense or feeling of something, an emotion,...)

anxiety it could burn my fingers,
surprise that it could get so
cold

Can I/Can it...?

talk?

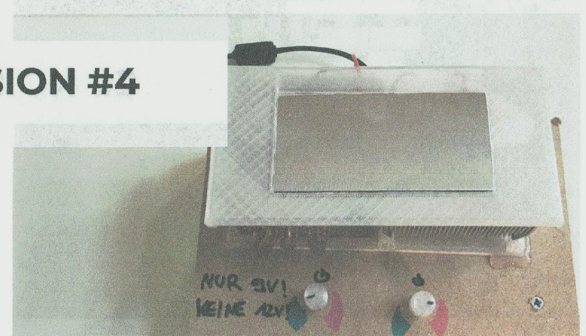
- I wish I had something like this for...
- I would not like to use this because...

controlling the
light in
the kitchen

Other thoughts? Doodle?

You have to
get used to it

VISION #4



Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

a philips light i,
a child's toy

I experienced... (e.g. a sense or feeling of something, an emotion,...)

empathy, it's super cute ♡

Can I/Can it... ?

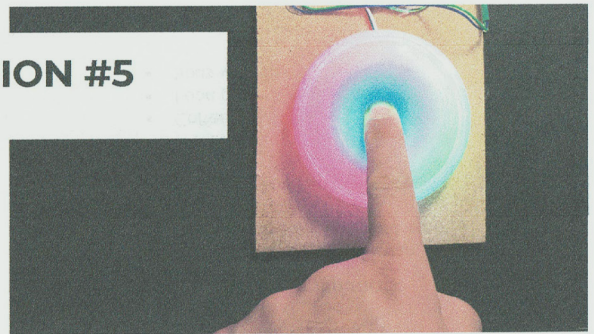
Bring ~~to~~ light at exactly the spot where I passed?

- I wish I had something like this for...
- I would not like to use this because...

control only
several
heat sources

Johanna

VISION #5



Other thoughts? Doodle?



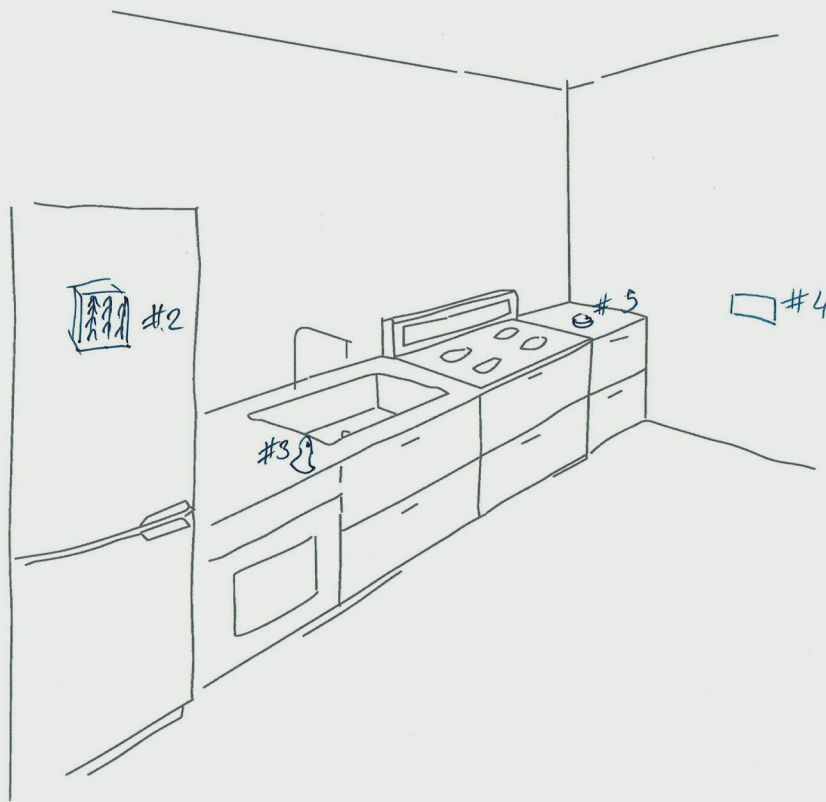
Additional thoughts:

List of common appliances:

- Stove (Electric, Gas, Induction, Ceramic matrix,...)
- Oven (Electrical, wood-fired, stone,...)
- Microwave oven ~~42~~
- Grill (Electrical, Gas)
- Fridge ~~42~~
- Freezer
- Coffee maker
- Food processor
- Sous-vide cooker

Johanna

Please feel free to use this template to visualize your thoughts:



Salva

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Transition, force, fluffiness, comparison
~~the word~~

I experienced... (e.g. a sense or feeling of something, an emotion,...)

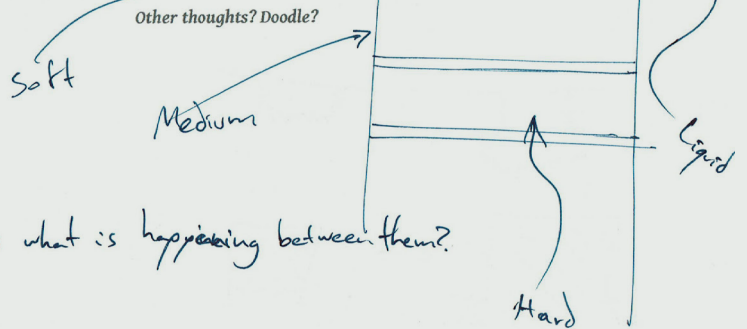
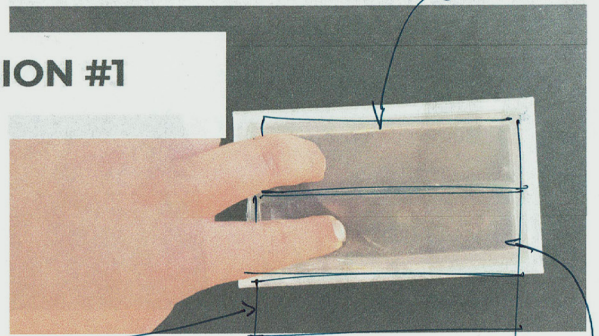
Control, learning,

Can I/Can it...?

Can it divide my food into layers to understand what is happening between them?
Can it teach ~~me~~ me how to cook?

- I wish I had something like this for... an oven, or microwave
- I would not like to use this because...

VISION #1



* Resembling a cake

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of... Bacon!

I experienced... (e.g. a sense or feeling of something, an emotion,...)

Curiosity, physics, understanding

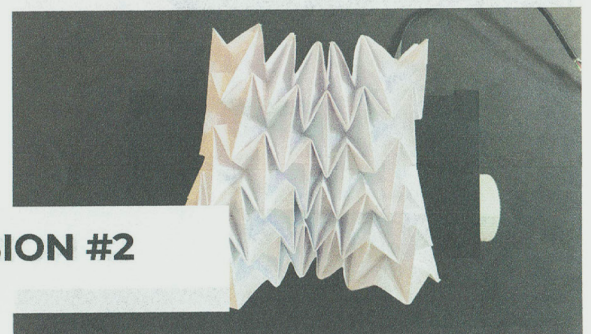
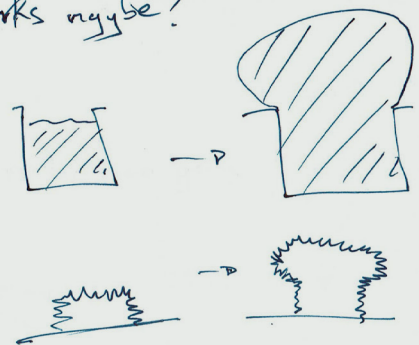
Can I/Can it...?

Can I visualize what's going to happen with my meat, mushrooms, spinach?

- I wish I had something like this for... estimating my quantities
- I would not like to use this because...

Other thoughts? Doodle?

Also to understand how yeast works right?



VISION #2

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of... *lever*

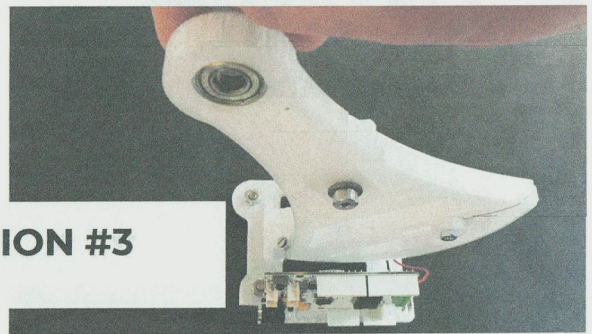
I experienced... (e.g. a sense or feeling of something, an emotion,...)

Response, AI, Feedback

Can I/Can it...?

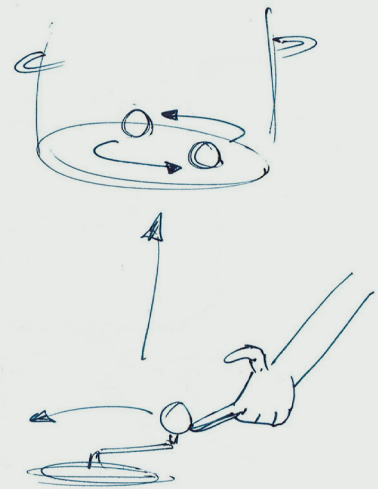
*Can I stir my food remotely, but having a feedback on the texture?
Can I set a motion inside a soup/recipe*

- I wish I had something like this for... *instead of a blender.*
- I would not like to use this because...



VISION #3

Other thoughts? Doodle?



Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of... *burners, fridge*

I experienced... (e.g. a sense or feeling of something, an emotion,...)

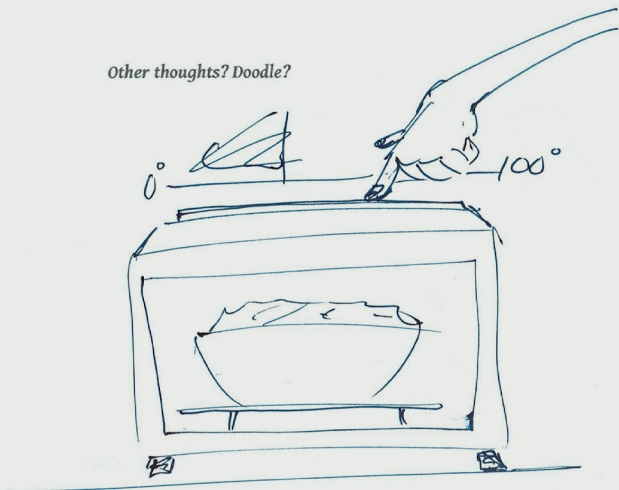
Danger,

Can I/Can it...?

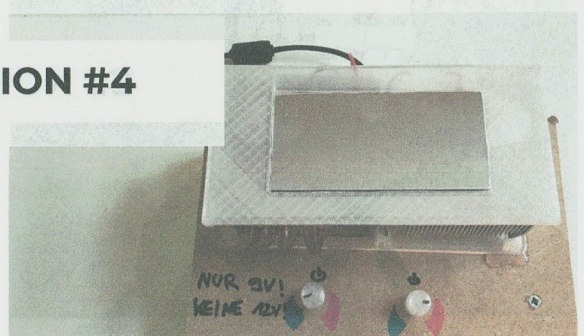
Record the transitions (heat) of my food

- I wish I had something like this for... *understanding what happens with my recipes, and learn*
- I would not like to use this because...

Other thoughts? Doodle?



VISION #4



Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of... 3D touch, jelly, candy

I experienced... (e.g. a sense or feeling of something, an emotion,...)

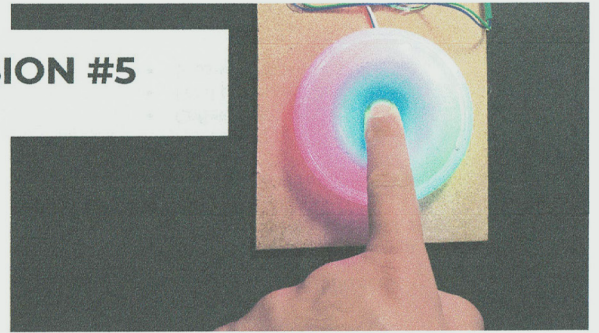
Innovation, future, imagination,

Can I/Can it...?

Can I shape it? Can I see the consistency of my food? (touch it)
Can I feel my food? Can I turn it?

I wish I had something like this for... learning how my food change, how the inner of my food looks
 I would not like to use this because...

VISION #5



Other thoughts? Doodle?

I would like to shape my stove,
by shaping how the burners are
distributed.

Additional thoughts:

I think a magnetic field (as in atheremin) matches these experiences, where you interact with a system in a more physical - interesting way.

I would like to see combination of the appliances maybe.

Also, can a ~~2~~ air fryer be added to the ideation?

Maybe if I could have these feedback in more simple appliances could also be nice (blender, tosti maker, ~~with~~ mixer).

List of common appliances:

- Stove (Electric, Gas, Induction, Ceramic matrix,...)
- Oven (Electrical, wood-fired, stone,...)
- Microwave oven
- Grill (Electrical, Gas)
- Fridge
- Freezer
- Coffee maker
- Food processor
- Sous-vide cooker

Please feel free to use this template to visualize your thoughts:



Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

LAYERS OF A CAKE
A PAUSE BUTTON

I experienced... (e.g. a sense or feeling of something, an emotion,...)

IT WAS ODDLY SATISFIED
TO HANDLE THE OBJECT,
BOTH FIRM AND GENTLE

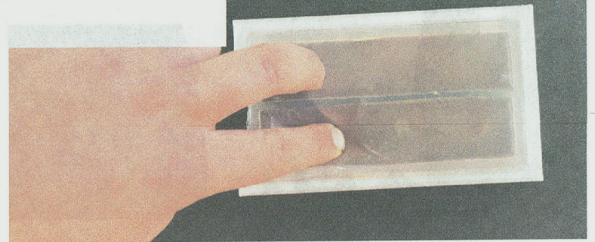
Can I/Can it...?

BE MADE BIGGER WITH MORE
COMPARTMENTS?

I wish I had something like this for...
 I would not like to use this because...

LEISURE, INTUITIVE CONTROL OF ...

VISION #1



Other thoughts? Doodle?

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

A LIVING ORGANISM

I experienced... (e.g. a sense or feeling of something, an emotion,...)

A COMPLICATED FEELING, I FEEL LIKE FIRMLY HANDLE
THE OBJECT, BUT IT WAS SO FRAGILE!!

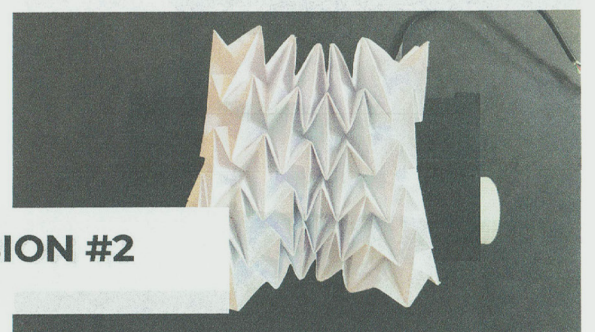
Can I/Can it...?

BE MADE MORE STURDY?

I wish I had something like this for...
 I would not like to use this because...

Other thoughts? Doodle?

VISION #2



Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

A TIME KEEPING DEVICE

I experienced... (e.g. a sense or feeling of something, an emotion,...)

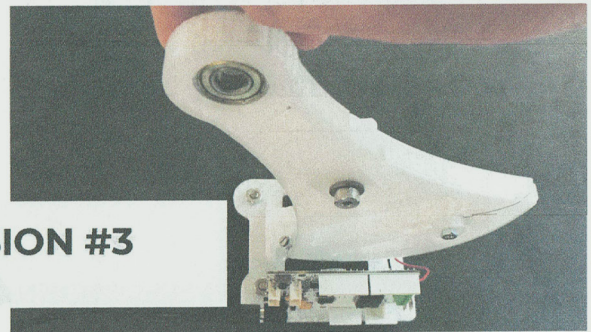
RECOGNITION

Can I/Can it... ?

MOVE BY ITSELF ?

- I wish I had something like this for...
- I would not like to use this because...

TO KEEP TRACK OF CERTAIN PROCESSES IN THE KITCHEN



VISION #3

Other thoughts? Doodle?

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

A SPECIAL ICECREAM COLD PLATE
A JAPANESE TZATZIKI PLATE

I experienced... (e.g. a sense or feeling of something, an emotion,...)

AMAZEMENT. HOT AND COLD

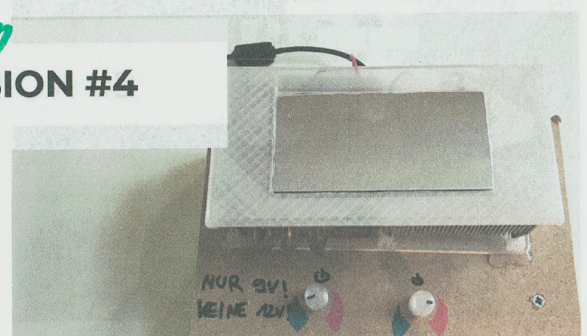
Can I/Can it... ?

RESET TO MUCH MORE
EXTREME SETTINGS SO YOU COULD
COOK WITH IT ?

- I wish I had something like this for...
- I would not like to use this because...

COOL TO SHOW
IT TO FOUR
VISITORS

Other thoughts? Doodle?



VISION #4

NUR 2V!
KEINE 2V!

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

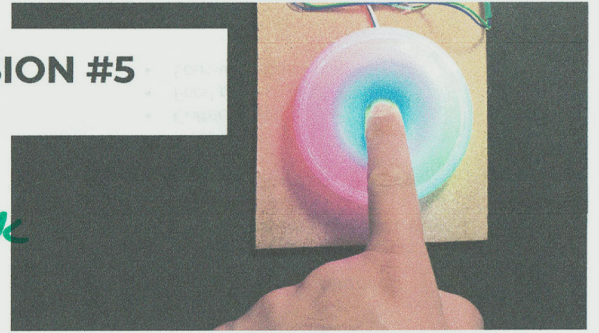
It reminded me of/made me think of...

A FUTURISTIC MULTI FUNCTIONAL
'BUTTON'

I experienced... (e.g. a sense or feeling of something, an emotion,...)

EXCITEMENT ABOUT THE TOUCH AND LOOK

VISION #5



Other thoughts? Doodle?

Can I/Can it... ?

- I wish I had something like this for...
- I would not like to use this because...

Additional thoughts:

List of common appliances:

- Stove (Electric, Gas, Induction, Ceramic matrix,...)
- Oven (Electrical, wood-fired, stone,...)
- Microwave oven
- Grill (Electrical, Gas)
- Fridge
- Freezer
- Coffee maker
- Food processor
- Sous-vide cooker

Please feel free to use this template to visualize your thoughts:



Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Fühle unterkühlter Konsistenz
 2.5g von Lebensmittel im Vorderfeld
 (+ Geruch) oder Haltbarkeit im VHL (Tob-
 VHL) schenke (wirden wieder...)

I experienced... (e.g. a sense or feeling of something, an emotion,...)

- Konsistenz beim Kauen (Geruch)
- Reizgrad von Gemüse als Wirtel

Can I/Can it...?

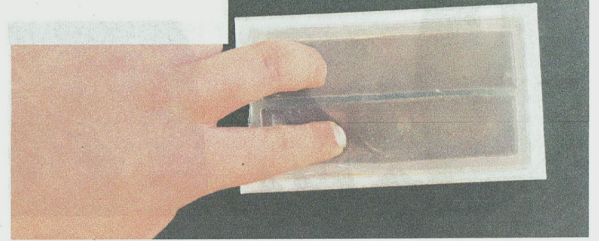


Zustand und Verantwortung bestimmte Lebensmittel zu
 Kauen (z.B. Tomaten, anderes Gemüse, Fleisch...)
 oder auch Konsistenz.

- I wish I had something like this for...
- I would not like to use this because...

- am den Geruch meines Lebens im Ohr zu
 kosten - ohne die Tür zu öffnen
 - zur Überprüfung des "Tastensystems" mein
 Gemüse im VHL schenke

VISION #1



Other thoughts? Doodle?

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

- ein Huhn
- ein Salat
- Teig
- Schinken

I experienced... (e.g. a sense or feeling of something, an emotion,...)

- Gefühl des Tragens durch meine Finger (meine Hand)
- Taktprüfung aus Ausland

Can I/Can it...?

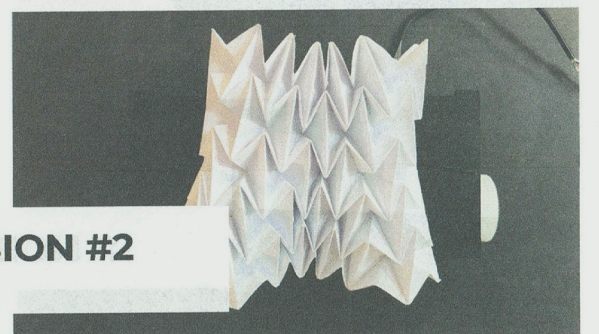
das Form meines Zuges
 (Huhn, Auflauf...)
 damit überprüfbar, bestanden?

- I wish I had something like this for...
- I would not like to use this because...

es fühlt sich gut an in
 der Hand als Bewegung
 Instrument z.B. Kochtopf

Other thoughts? Doodle?

VISION #2



Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Reichen hebel (Eisenbahn)
Wasserpumpe

I experienced... (e.g. a sense or feeling of something, an emotion,...)

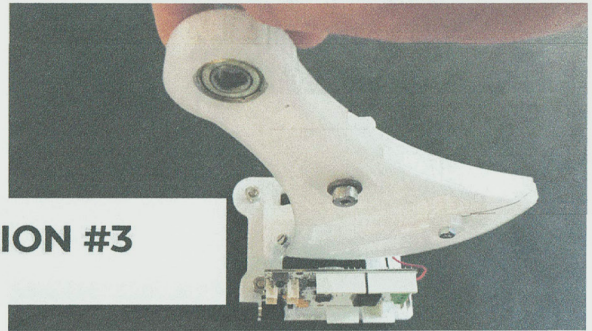
ich habe demt etwas
Einstellen oder drosseln

Can I/Can it... ?

Verstellung für ein Stück möglich
(durch, außen, blutig...)

- I wish I had something like this for...
- I would not like to use this because...

Verstellung der Stifte
meiner Kaffeemaschine



VISION #3

Other thoughts? Doodle?

Please describe your encounter with the prototype.

Other thoughts? Doodle?

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

- heiße Kochplatte, eis kalter Kühlschrank
- Speisebox
- Teil aufgestaute Lebensmittel

I experienced... (e.g. a sense or feeling of something, an emotion,...)

angenehme Oberfläche, schön darüber zu streichen
sehr heiß, sehr kalt → zwisch, Hände weg

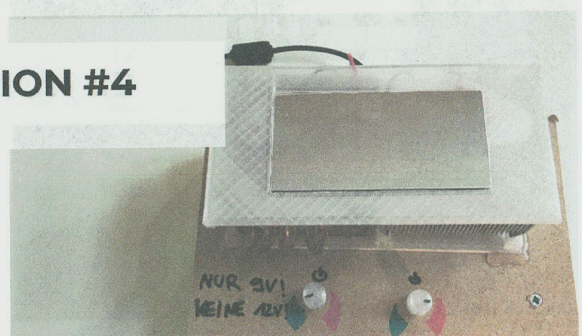
Can I/Can it... ?

drückt die Hitze verstellbar, regulieren,
Überprüfen

- I wish I had something like this for...
- I would not like to use this because...

zur Überprüfung
der Temperatur in meiner Ohr,
meiner Anflautoren oder Hornen

VISION #4



Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Temperaturregler Duedes Pool
 Festes och weiches Brot
 (noch heiß och schon abgekühlt)

I experienced... (e.g. a sense or feeling of something, an emotion,...)

warm/kalt in Bezug auf
 Festigkeit och Flüssigkeit etc.
 von etwas. Abhängig von der Temperatur?

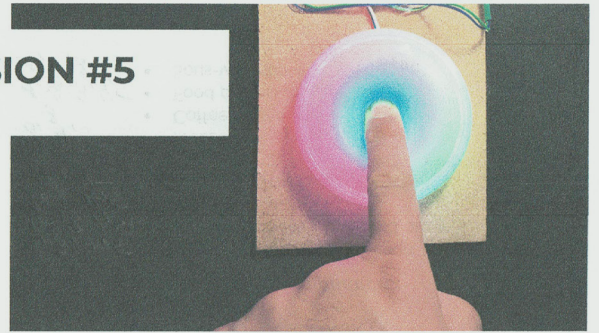
Can I/Can it.. ?

ob auch die Konsistenz
 in Bezug auf die Raumverteilung
 kosten?

- I wish I had something like this for...
- I would not like to use this because...

Regulierung der Verteilung
 in einem Pfanne (Aufbacken)
 um gleichmäßige Konzentration
 zu regulieren

VISION #5



Other thoughts? Doodle?

och Zustand
 der Lebensmittel
 beim Einfrieren/
 Auftauen

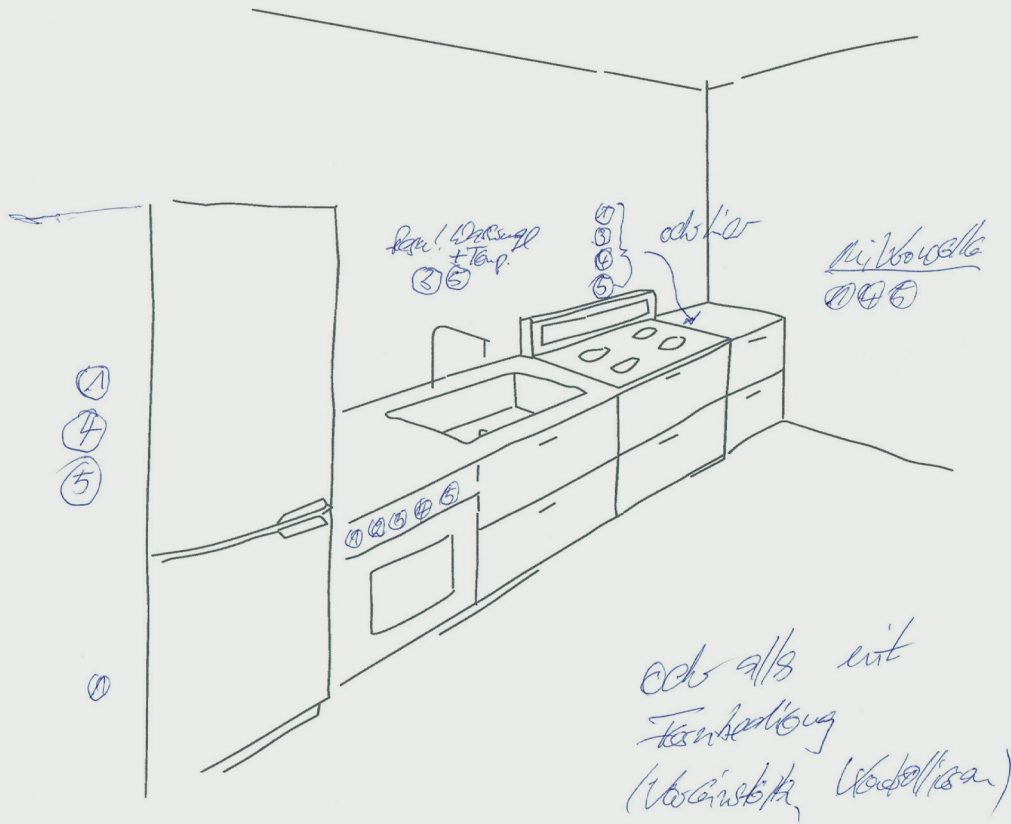
Additional thoughts:

- Kontrolliert kühlen
 in verschiedenen Umgebungen
 des & nicht Tiefkühltruhe
 - Verschieden Temperatur in
 verschiedenen Umgebungen
 des Kühlschranks für
 Vorne z. B. Gefriertruhe
 Temperatur des Fleisches im
 Fleischfach vor der Pfanne
 oder des Eis vor
 Wachen, Gemüse usw.

List of common appliances:

- 1, 3, 4, 5 • Stove (Electric, Gas, Induction, Ceramic matrix,...)
- 1, 2, 3, 4, 5 • Oven (Electrical, wood-fired, stone,...)
- 1, 4, 5 • Microwave oven
- 1, 2, 4 • Grill (Electrical, Gas)
- 1 • Fridge
- 1, 4, 5 • Freezer
- 1, 3 • Coffee maker
- 1, 2, 3, 4, 5 • Food processor
- 1, 2, 3 • Sous-vide cooker

Please feel free to use this template to visualize your thoughts:



Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of... *je pense à un gâteau qui monte, gonfle, puis durcit.*

I experienced... (e.g. a sense or feeling of something, an emotion,...)

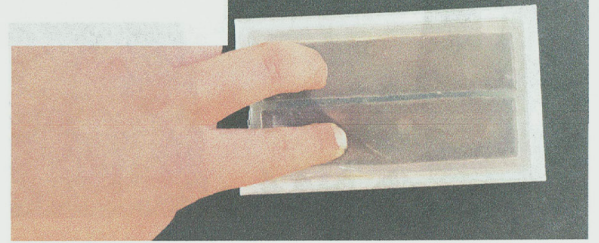
les différences entre monter, durcir rappellent les différentes étapes de la cuisson d'un gâteau.

Can I/Can it... ?

Serait-ce possible d'avoir un détecteur qui suit et traduit les différentes étapes de la cuisson sans devoir ouvrir et fermer le four à plusieurs reprises pour tester le gâteau et recevoir la vapeur chaude du four au visage.

- I wish I had something like this for... *pour le four.*
- I would not like to use this because...

VISION #1



Other thoughts? Doodle?

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Sous-vide pour la conservation des aliments.

I experienced... (e.g. a sense or feeling of something, an emotion,...)

Mesurer le degré de sous-vide soit pour la congélation ou juste pour conserver des choses fragiles donc arrêter à temps le sous-vide pour ne pas abîmer les choses. Sous-vide: procédé graduel!

Can I/Can it... ?

un appareil précis et pratique pour mettre sous-vide ou peut-être même une machine pour le café pour mesurer si le café est bien serré ou non - (expresso serré)

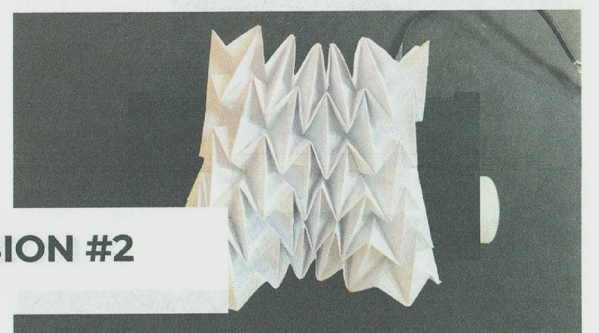
- I wish I had something like this for...
- I would not like to use this because...

Machine légère ce serait bien si une personne avec des différents goûts de café serré ou non -

Other thoughts? Doodle?

— espresso machine

VISION #2



Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

pour les ouvertures de porte à la cuisine ou des tiroirs

I experienced... (e.g. a sense or feeling of something, an emotion,...)

Avec quelle force et jusqu'où aller jusqu'à ce que le fonctionnement se fasse sans effort et avec élégance.

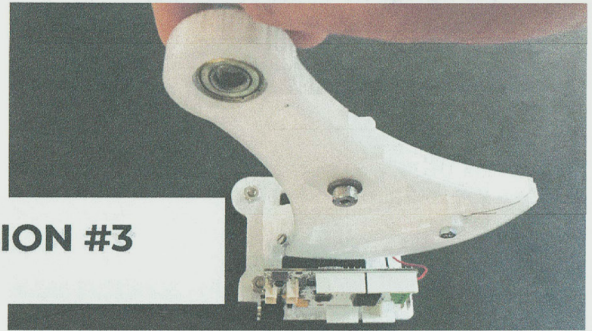
Can I/Can it...?

Je conçois ce système pour l'ouverture et la fermeture des machines et portes et tiroirs dans la cuisine

I wish I had something like this for...

I would not like to use this because...

pour faciliter le déroulement des actions à la cuisine surtout quand on a les mains sales pour éviter soit salir le tout ou de se laver les mains sans cesse.



VISION #3

Other thoughts? Doodle?

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

la température au feu qui en général n'est pas égal partout -

I experienced... (e.g. a sense or feeling of something, an emotion,...)

Les aliments ou les gâteaux ne cuisent pas de la même façon partout -

Can I/Can it...?

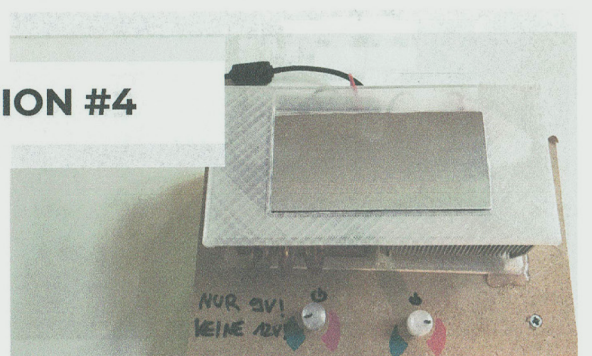
Je trouve que ce serait bien de pouvoir mieux gérer la température du feu pour une meilleure répartition de la chaleur

I wish I had something like this for...

I would not like to use this because...

pour le feu ou le grill.

Other thoughts? Doodle?



VISION #4

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

un bouton magique qui au simple toucher me renseigne par sa couleur et son toucher, me donne plusieurs informations en même temps

I experienced... (e.g. a sense or feeling of something, an emotion,...)

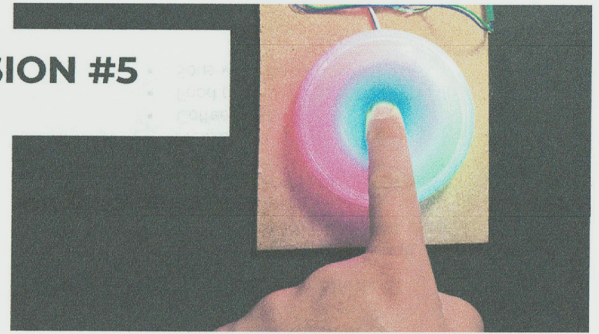
Gagner du temps en jouant avec un objet plaisant - agréable au toucher et à la vue - un jouet efficace qu'on a plaisir à utiliser et en même temps utile pour diverses informations.

Can I/Can it... ?

Je peux le concevoir pour un réfrigérateur qui me renseigne sur la température de chaque étagère; différentes couleurs par exemple.

I wish I had something like this for...
 I would not like to use this because...

le frigo

VISION #5

Other thoughts? Doodle?

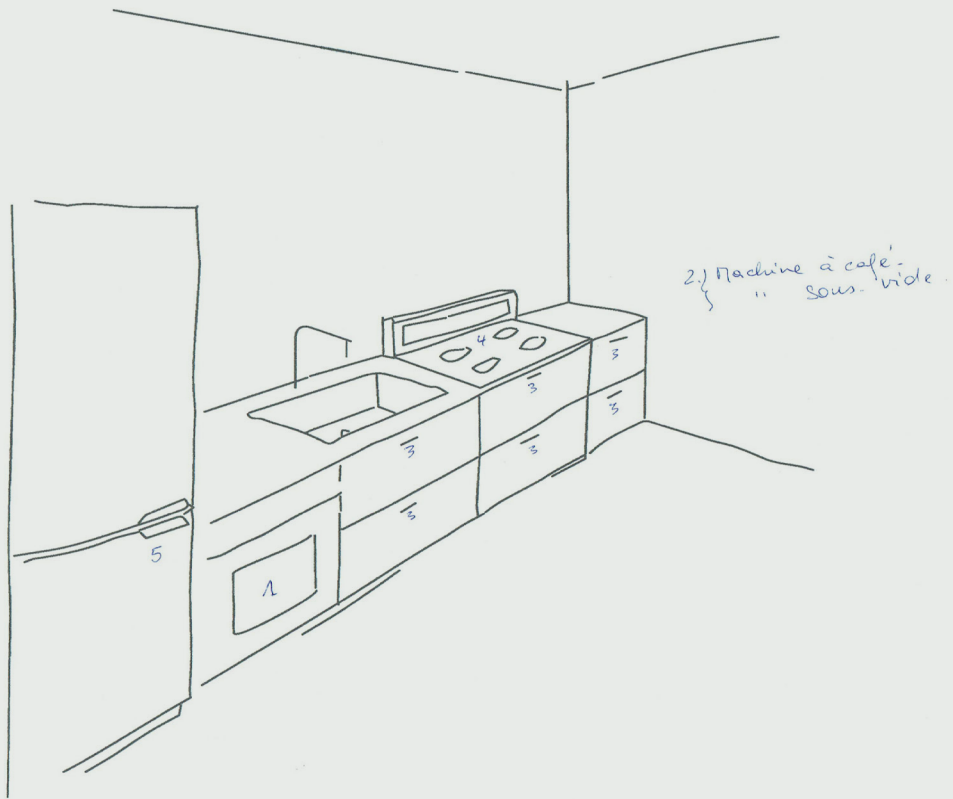
Additional thoughts:

voilà une multitude de moyens confortables pour une journée à la cuisine agréable avec des sensations visuelles (lumière) et tactiles (boutons, systèmes etc...) qui rendent le travail non seulement facile mais une aventure -

List of common appliances:

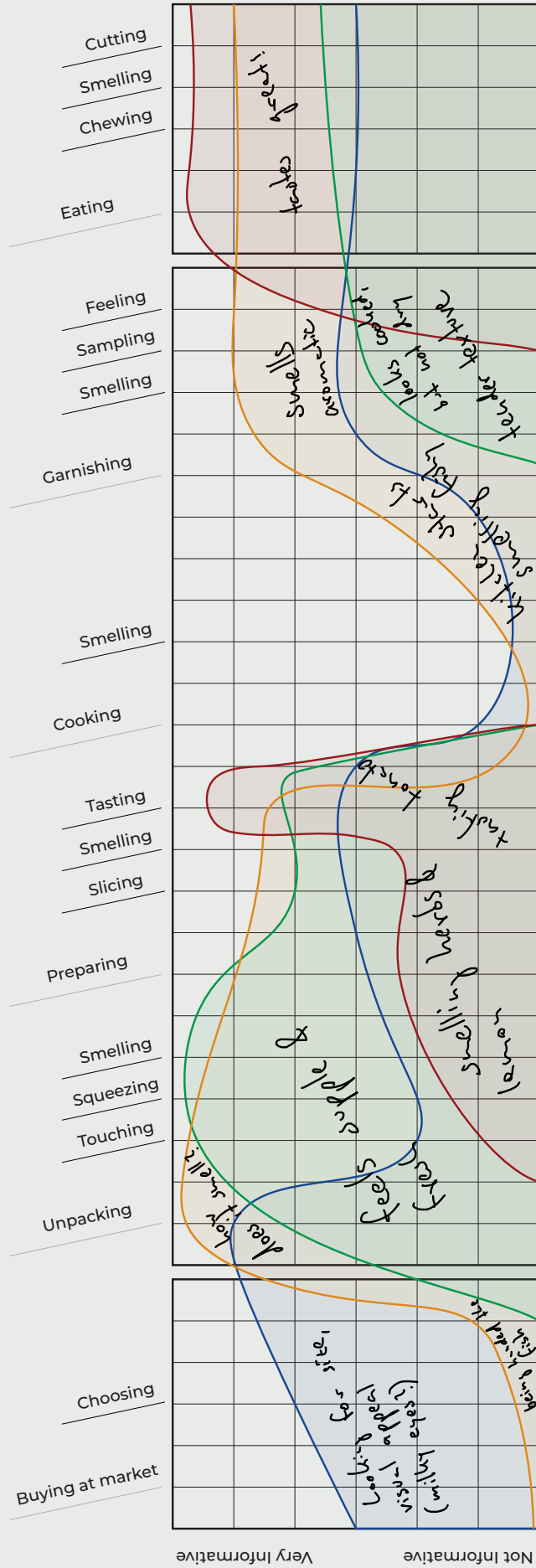
- Stove (Electric, Gas, Induction, Ceramic matrix,...)
- Oven (Electrical, wood-fired, stone,...)
- Microwave oven
- Grill (Electrical, Gas)
- Fridge
- Freezer
- Coffee maker
- Food processor
- Sous-vide cooker

Please feel free to use this template to visualize your thoughts:

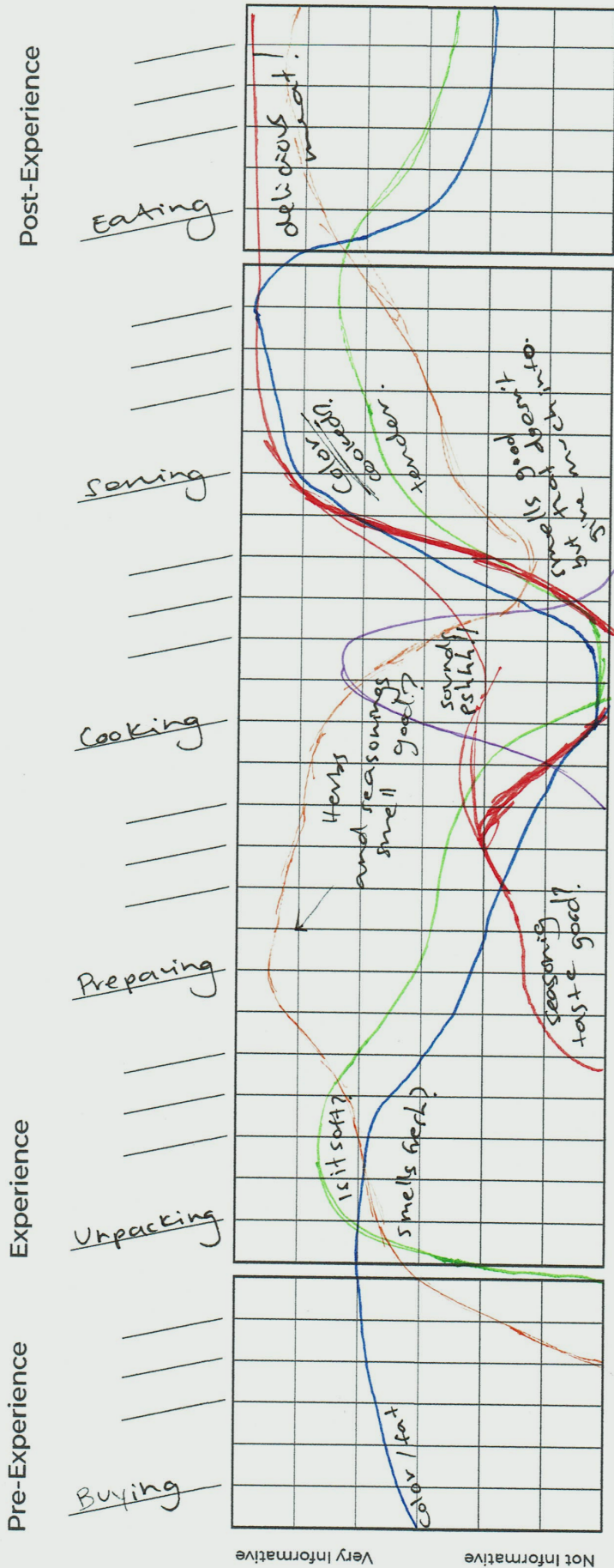


APPENDIX III

Post-Experience



- Visual
- Haptic
- Olfactory
- Gustatory
- Auditory

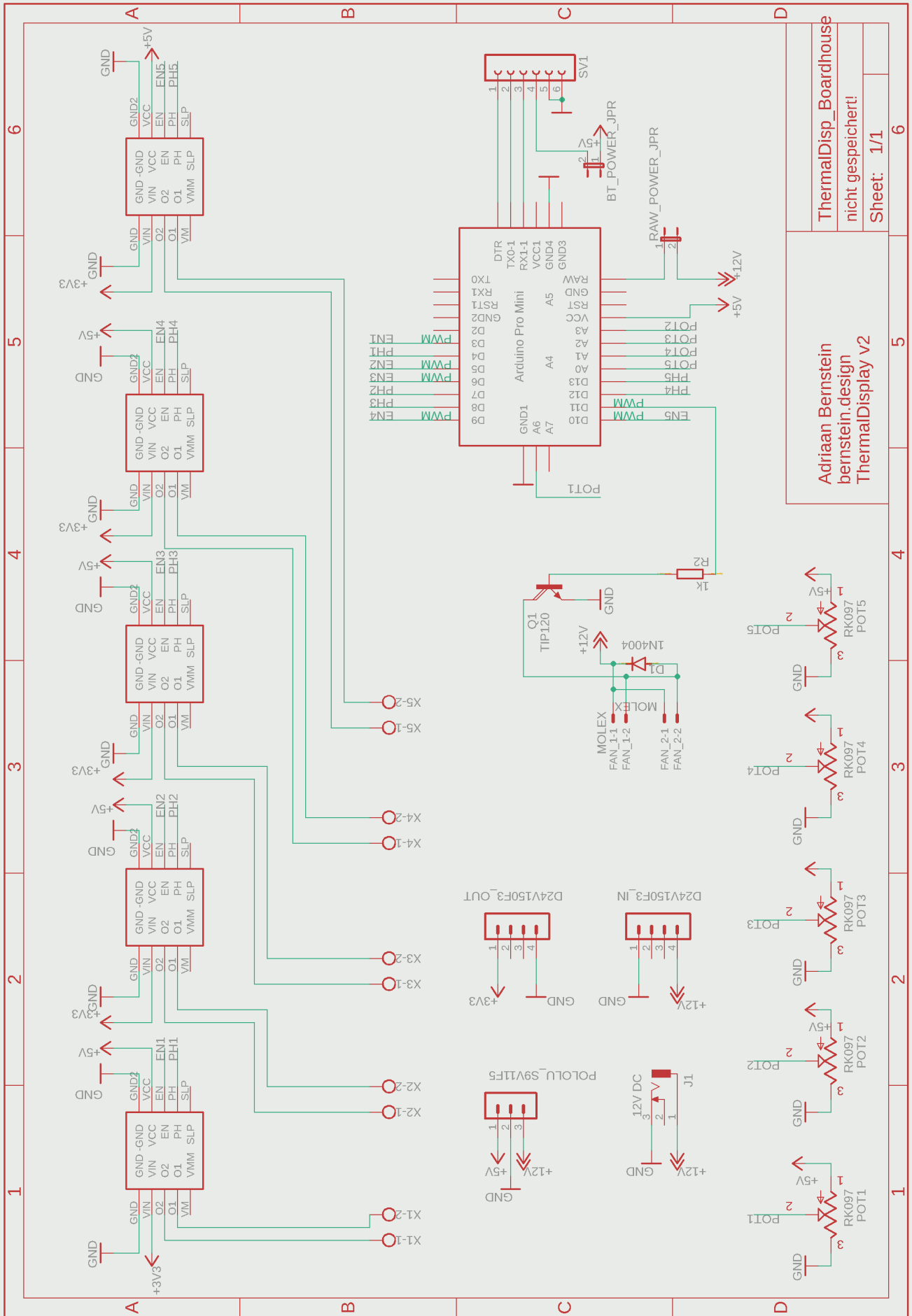


It is very hard to know if meat is ready without cutting it, Guidance would be helpful.

Notes

- Visual
- Haptic
- Olfactory
- Gustatory
- Auditory

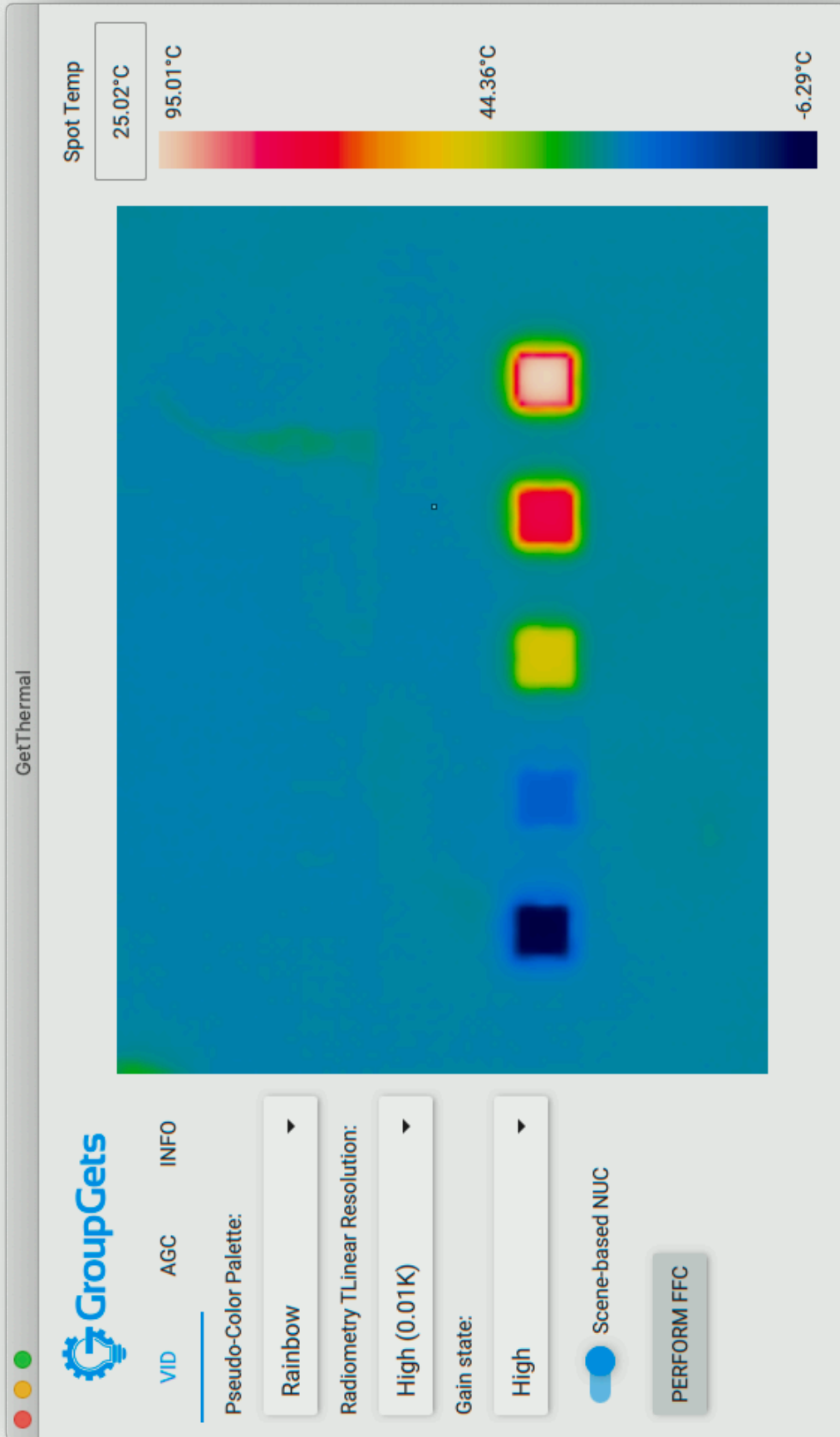
APPENDIX IV

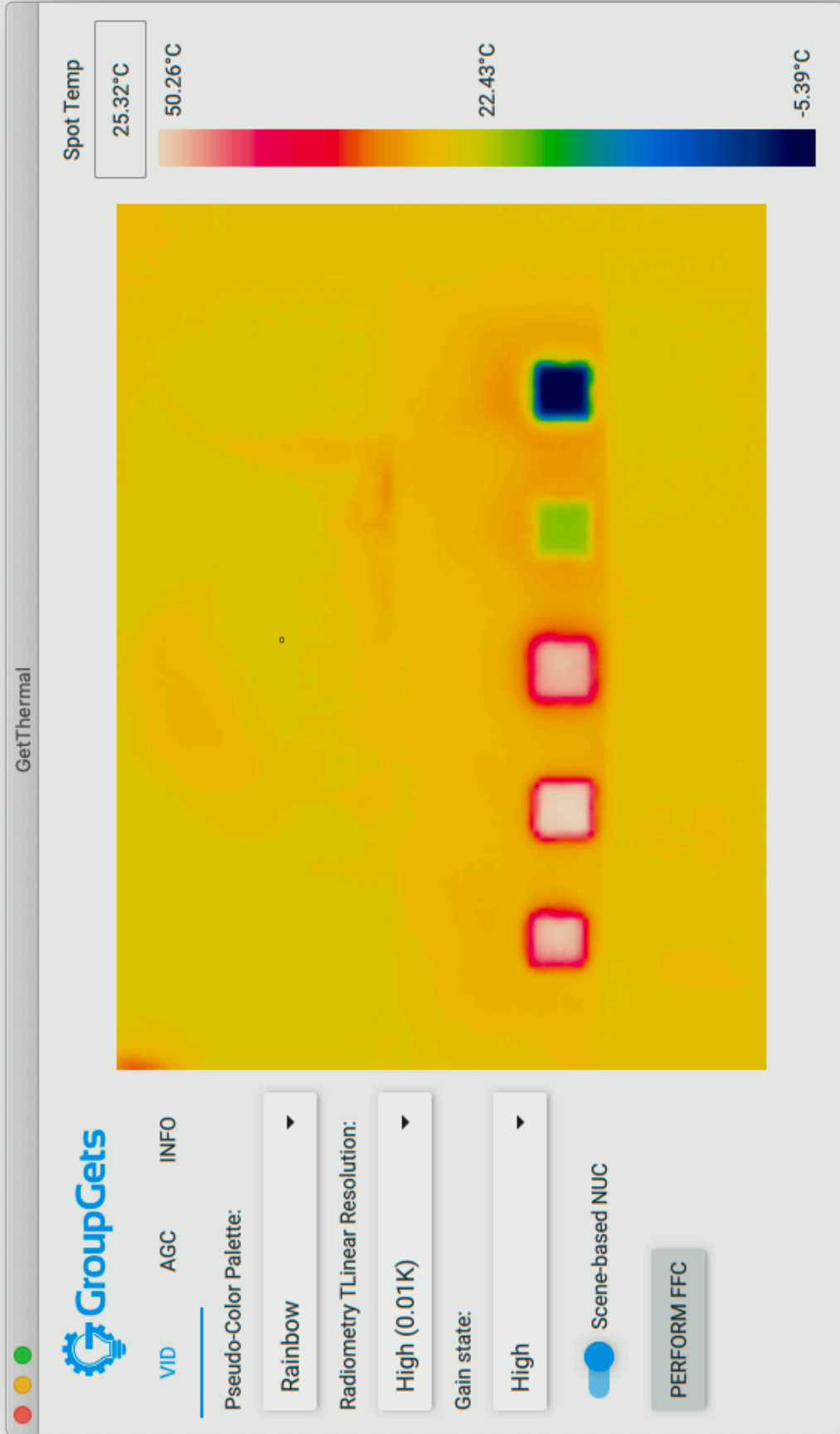


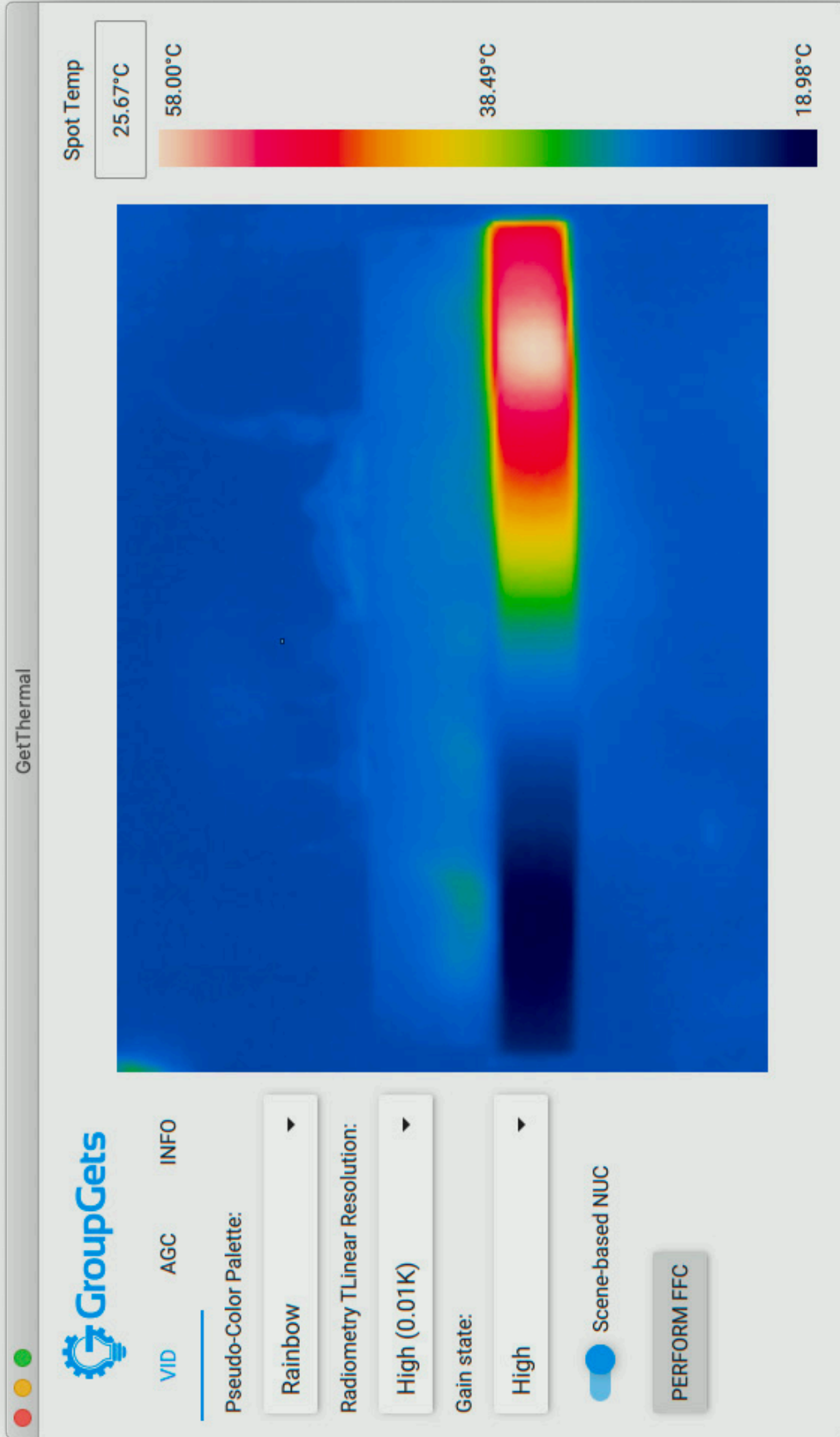
ThermalDisp_Boardhouse
 nicht gespeichert!
 Sheet: 1/1

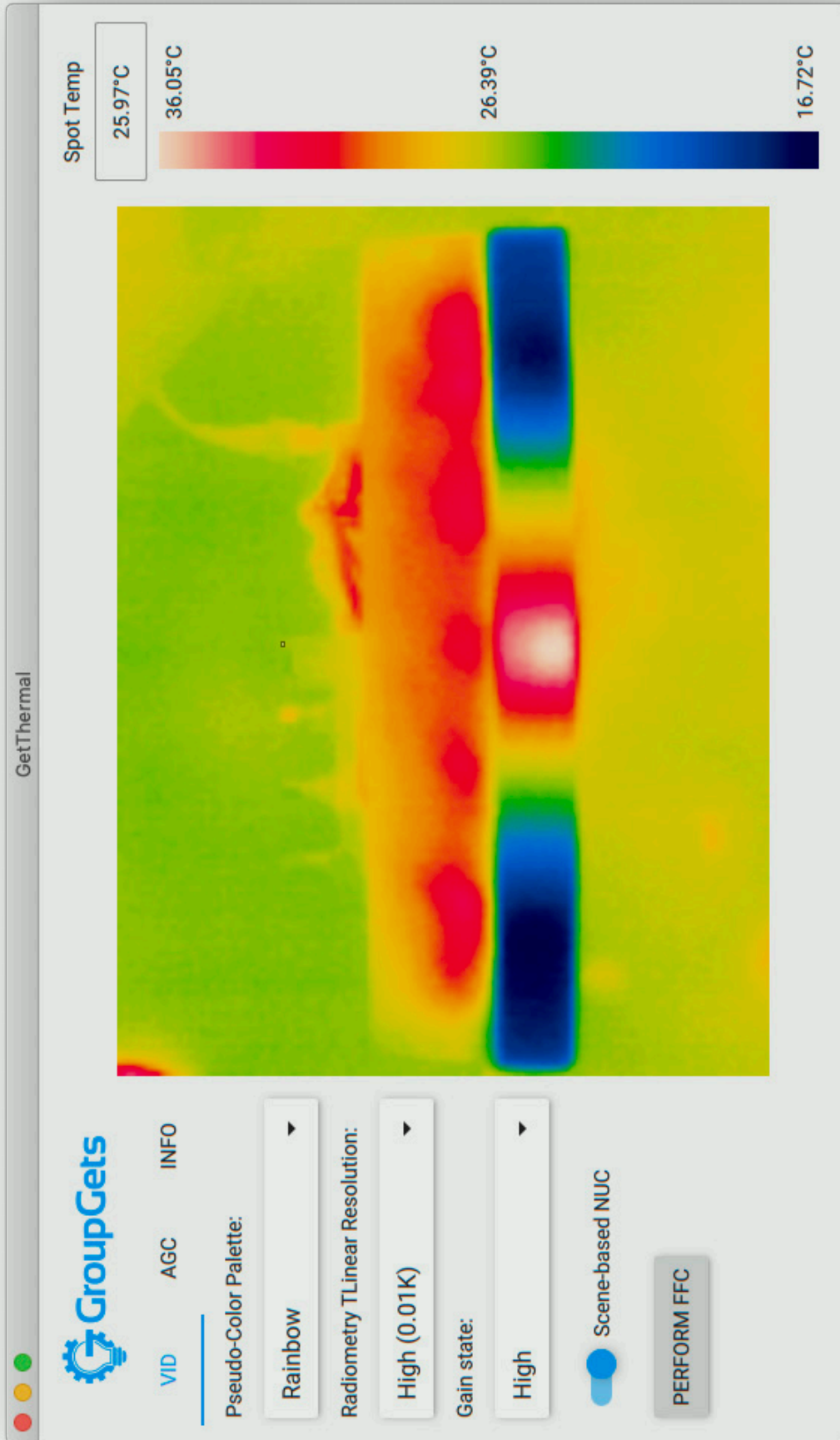
Adriaan Bernstein
 bernstein.design
 ThermalDisplay v2

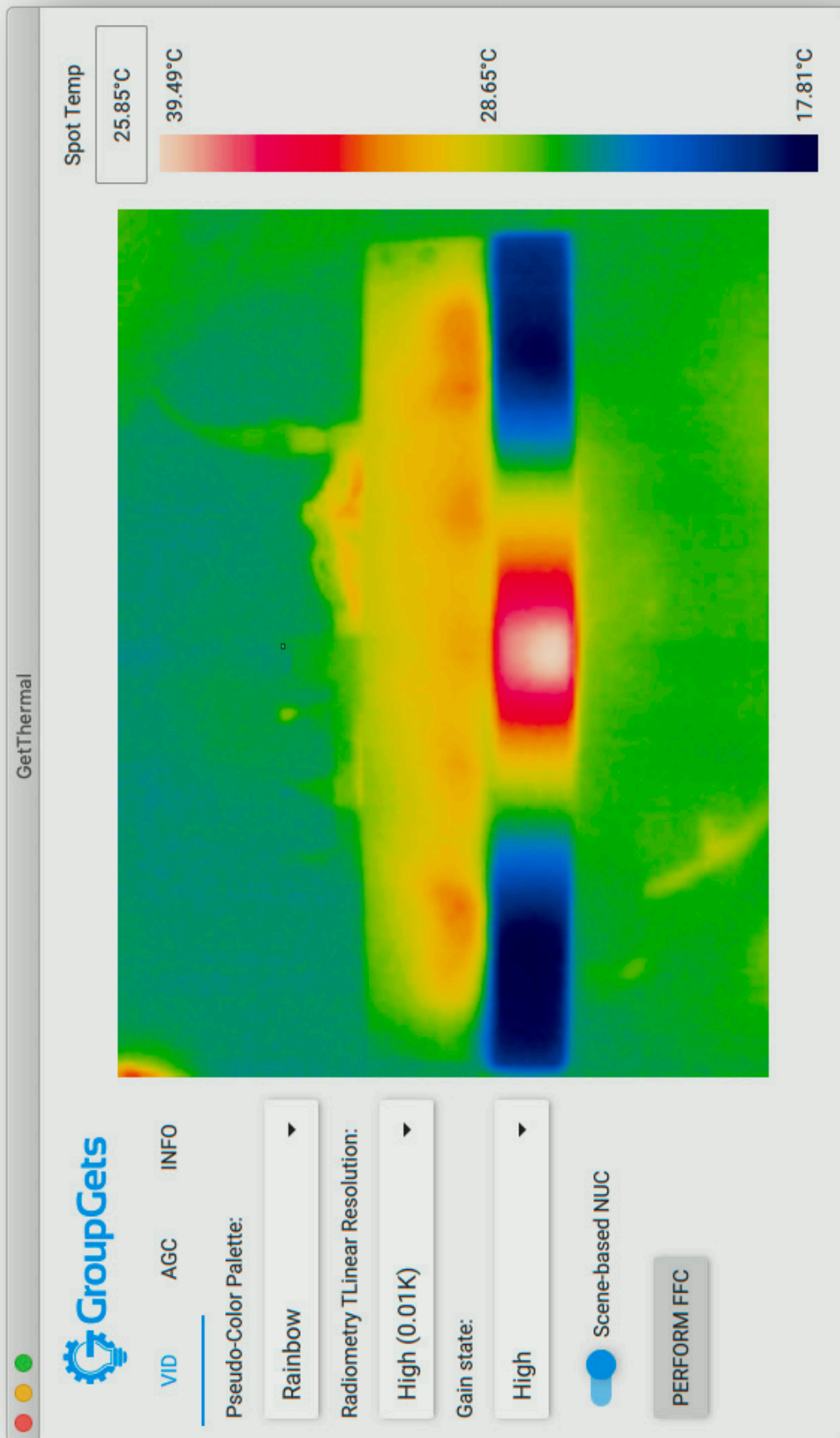
APPENDIX V

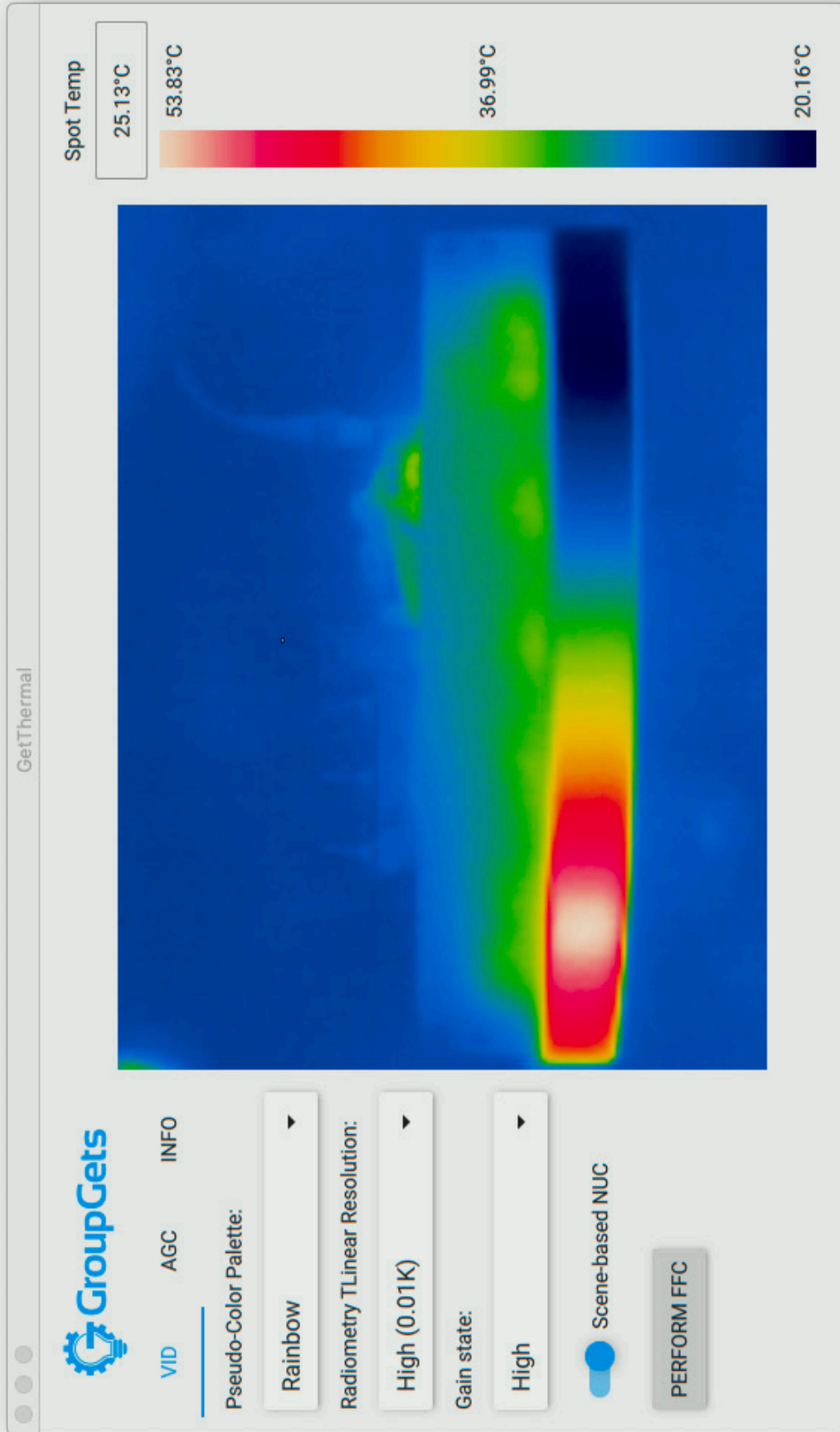












GroupGets

VID AGC INFO

Pseudo-Color Palette:

Rainbow

Radiometry TLinear Resolution:

High (0.01K)

Gain state:

High

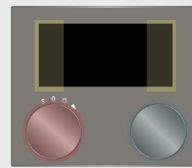
Scene-based NUC

PERFORM FFC

GetThermal

APPENDIX VI

Position	Function/heating function	Temperature
0	Off position	
1	Light	
2	Hot air	50 - 300 °C Default temperature 170 °C
3	Eco hot air*	50 - 300 °C Default temperature 170 °C
4	Top + bottom heat	50 - 300 °C Default temperature 170 °C
5	Top + 1/3 bottom heat	50 - 300 °C Default temperature 170 °C
6	Top heat	50 - 300 °C Default temperature 170 °C
7	1/3 Top + bottom heat	50 - 300 °C Default temperature 170 °C
8	Bottom heat	50 - 300 °C Default temperature 170 °C
9	Hot air + bottom heat	50 - 300 °C Default temperature 170 °C
10	Hot air + 1/3 bottom heat	50 - 300 °C Default temperature 170 °C
11	Full surface grill + circulated air	50 - 300 °C Default temperature 220 °C
12	Full surface grill	50 - 300 °C Default temperature 220 °C
13	Compact grill	50 - 300 °C Default temperature 220 °C
14	Baking stone function	50 - 300 °C Default temperature 250 °C
15	Roaster function	50 - 220 °C Default temperature 180 °C
16	Dough proving	30 - 50 °C Default temperature 38 °C
17	Defrosting	40 - 60 °C Default temperature 45 °C
18	Keeping warm	30 - 120 °C Default temperature 70 °C
S	Basic settings	
	Pyrolytic self-cleaning	485 °C



Touch areas:
Function control & submenu selections, navigation

Function selector:
On/Standby, Basic function selection

Rotary controller:
Temperature control, timer control, submenu selector



Symbols

Symbol	Function
▶	Start
■	Stop
	Pause/End
X	Cancel
C	Delete
✓	Confirm/save settings
>	Selection arrow
□	Open appliance door
i	Call up additional information
»»	Rapid heating with status indicator
	Call up individual recipes
REC	Record menu
↘	Edit settings
>A	Enter name
✕	Delete letters
🔒	Child lock
🕒	Call up timer menu
🕒	Call up long-term timer
🔧	Demo mode
🔧	Call up core temperature probe
🔧	Start rotisserie spit
🔧	Stop rotisserie spit
»»	Start roasting function
»»	End roasting function

Standby



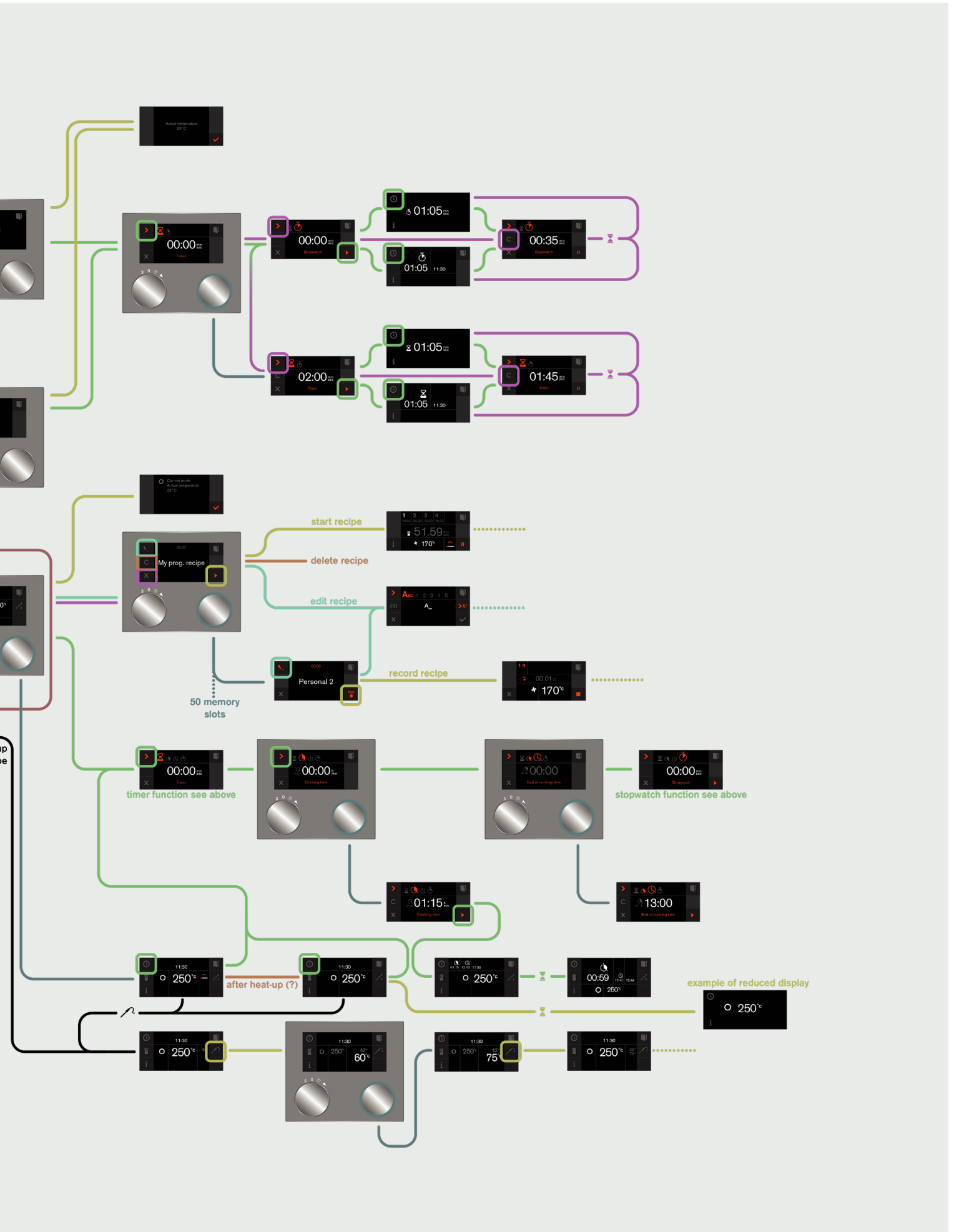
Light



Function

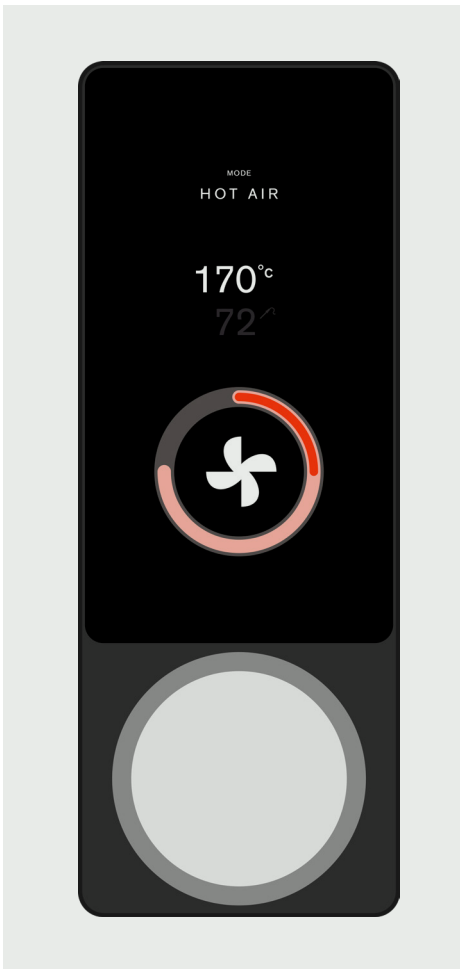
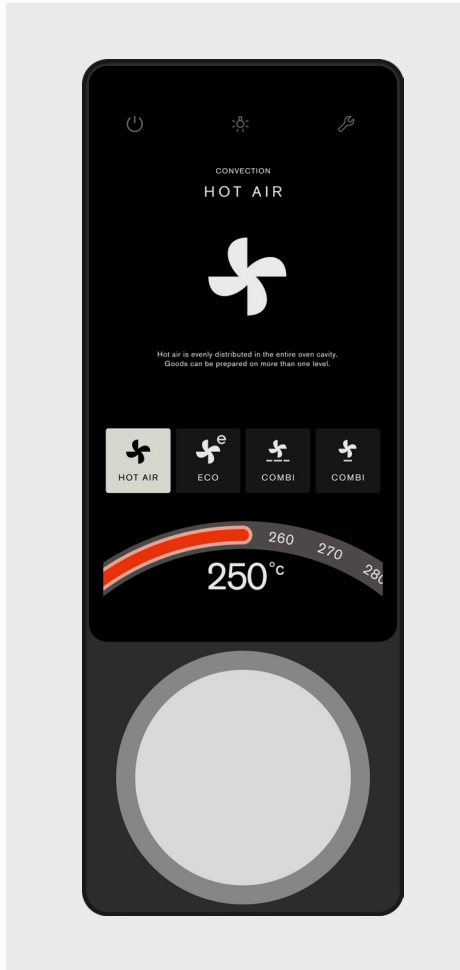


insert temp probe

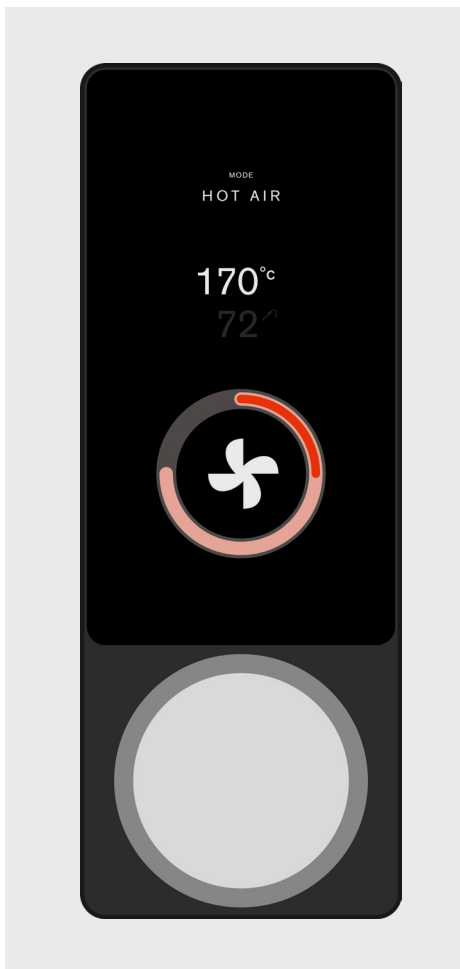
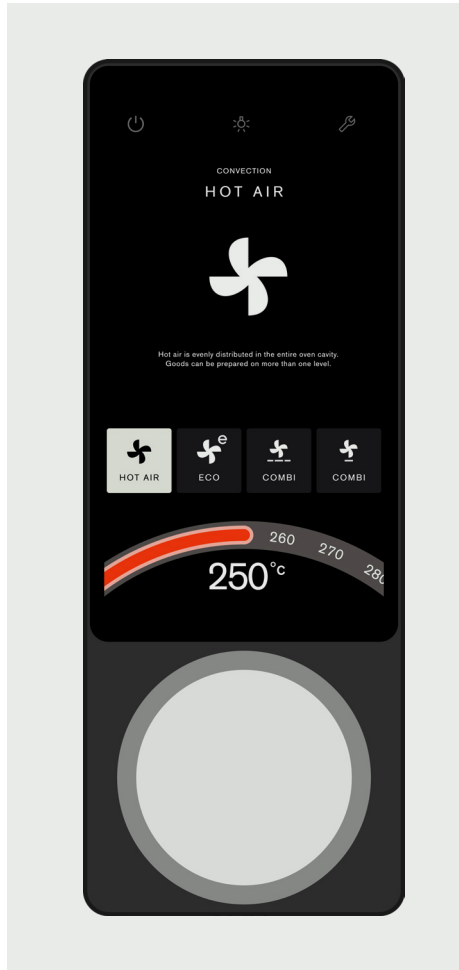


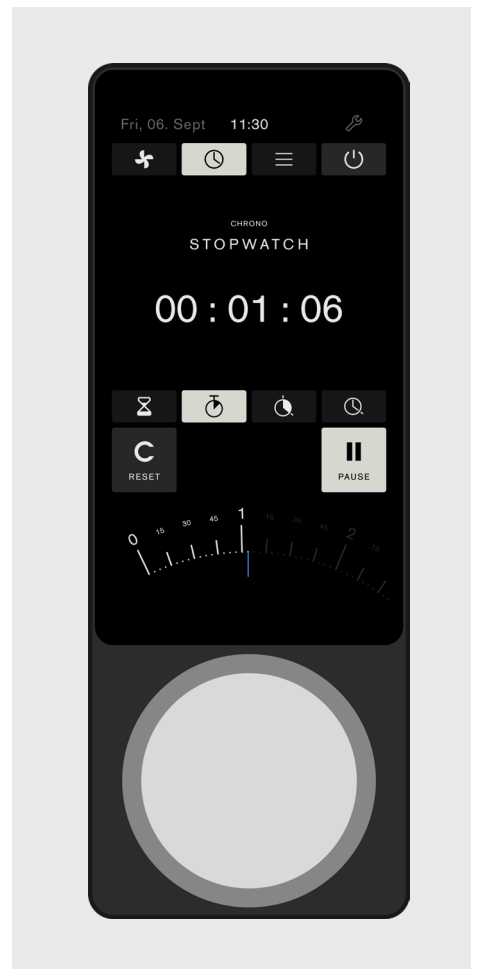
APPENDIX VII

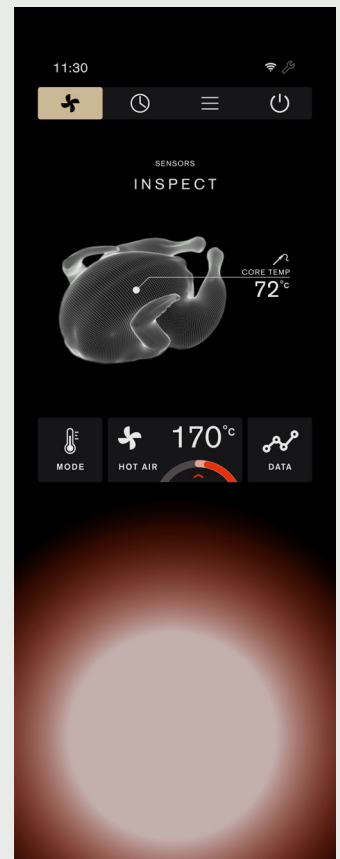
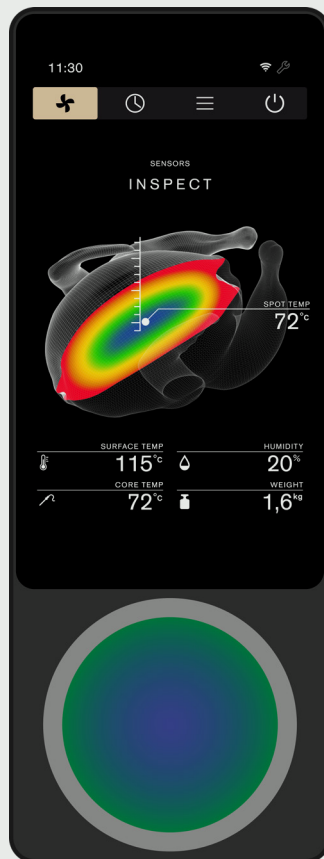
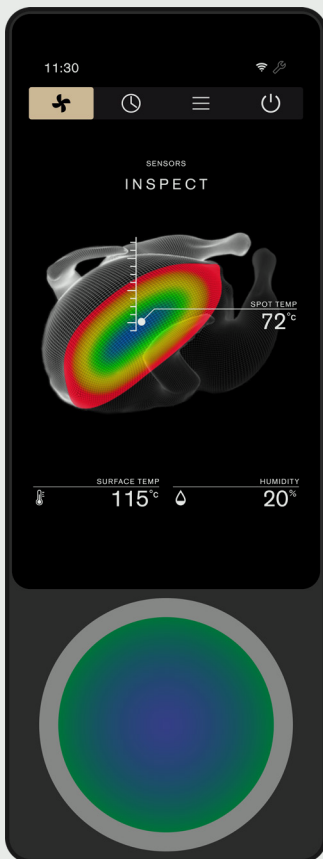
APPENDIX VIII

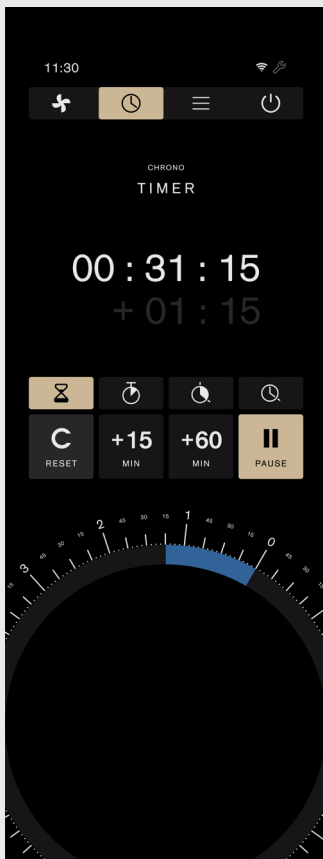
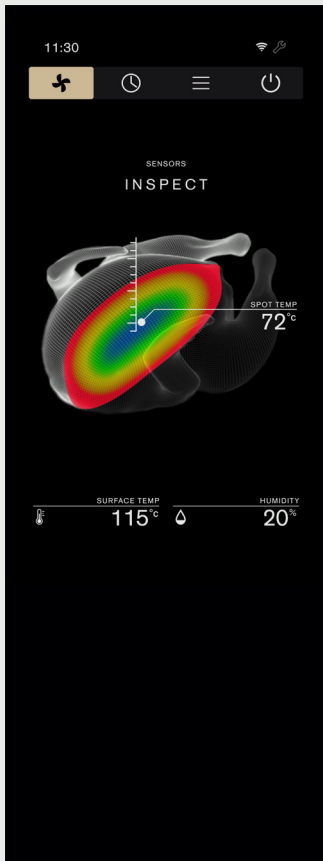












APPENDIX IX

Imagine you and your partner are baking a bread. Your partner left you in charge to take the break out once it's ready.

You know the oven is set to 170°C and the bread has been in the oven about 30 minutes ago.

You come into the kitchen, you see the oven and its interface. What are your first thoughts?

The light emitting surface is intriguing and I immediately take a closer look at the soft touch area of the dial.

Did the interface steer you towards the right touch point (the dial)?

Yes, to me it seems pretty clear that the soft area is intended to provide an interaction. And I assume that the ring around it is some sort of rotary dial.

Was the meaning of the interface clear to you? Describe your experiences.

As soon as I apply pressure on the soft area I can see a change in color & experience a different grades of density. I associate the colors with temperature and a cardinalial with the visual reference (hologram).

What benefits or drawbacks do you see compared to conventional interfaces?

I do understand that the density must refer or indicate the consistency of the bread.

Firstly I think that it is quite novel, thus it might take a while to fully make use of it's potential. What

How satisfied were you with the experience of discovering the meaning of the interface?

To be honest I am quite fascinated by the sensation of its feedback.

Definitely a touchpoint that triggers my curiosity. It feels like a more natural &

Would you want to use it in your own kitchen?

I could very well imagine to get used to such a multisensorial dial.

Any further ideas or suggestions?

Perhaps the color could also indicate how long the meal still needs to cook over distance. Or you might even take the dial with you like a remote control.

engaging way of interacting with a machine.

I love about it is its aesthetics & sensual feedback. It has this organic character-istic that I associate with the archaic elements linked to cooking. That quality I miss in conventional kitchen aids.

APPENDIX X

IDE Graduation Assignment_Bernstein, Adriaan_4543157_22-11-2017

IDE Graduation Assignment

GENERAL INFORMATION

Title Graduation Project ¹³	Achieving Sustained Satisfaction via Metaphoric Interface Design: A case study for the digitally enabled luxury kitchen		
Chair of Supervisory Team ¹⁴	Keller, A.I.		
Department / Section	Department of Industrial Design (ID), DCC		
Mentor of Supervisory Team ⁴	Schifferstein, H.N.J.		
Department / Section	Department of Industrial Design (ID), Design Aesthetics		
Project commissioned by ¹⁵	<input type="checkbox"/> Faculty	<input checked="" type="checkbox"/> Company	<input type="checkbox"/> Other, e.g. entrepreneurial
Project type ⁵	<input checked="" type="checkbox"/> Design	<input type="checkbox"/> Research ¹⁶	<input type="checkbox"/> Other, e.g. entrepreneurial
Company name, if applicable	Gaggenau		
City & Country	Munich, Germany		
Company Mentor	Piort Szpryngwald		
Start date	27.11.2017		
End date	30.04.2018		

CONTENT

Introduction

Gaggenau is a luxury kitchen- and home appliances manufacturer. As such, it can be argued that enabling more luxurious and satisfactory experiences by defining novel interactions for its products and services is paramount. While technological progress leads to an increasingly complex situation in which to achieve this, it also provides a multitude of opportunities to shape more intuitive, meaningful experiences in unexpected ways.

As the permeation of digital technology into traditional fields of design progresses, the chance arises to see this not merely as the driving force behind increasingly complex interfaces. Rather, it might be leveraged into evoking curiosity, compelling the user to explore and appropriate the possibilities the interface provides in an intrinsically motivated manner. By those means, interfaces may provide ways to ensure a sustained level of satisfaction, renewed challenge, intrigue and wonder, as the product turns into a reflection of individual ambitions. Instilling it with metaphorical meaning to allow users to call upon their inherent sense of intuition in a given context (e.g. by anthropomorphizing it) may be of exceptional interest for achieving this goal.



Problem definition

When it comes to better understanding the nature by which interactions between individuals and digitally enabled products are shaped, the field of Human-Computer Interaction (HCI) provides many insights. One paradigm discussed within this field is of particular interest: Multimodal interfaces. As opposed to unimodal interfaces, they explore multiple human perceptual channels to establish an effective dialogue between a system and its user. Most knowledge available about multimodal interfaces and (to some extent) HCI in general however, focusses on functional requirements of the interface rather than the quality of the user experience. This also holds true for its theoretical potential to effectively convey information in a particular context. While limited knowledge is also available about the potential to shape meaningful, multimodal interactions within the confines of artistic expression, it provides little insight into enriching interfaces with metaphorical meaning or designing for a more human-centered approach in general.

IDE Graduation Assignment_Bernstein, Adriaan_4543157_22-11-2017

Assignment

The ambition is to investigate how an intimate, conversational relationship between user and interface can be achieved, in particular by means of creating metaphoric allegories allowing users to call upon an immanent sense of intuition catering to multiple sensory modalities. To that end, two modalities (senses) may be of heightened interest when it comes to emotional richness, namely the tactile (touch) and the olfactory (smell).

A concept demonstrator of a product/interface incorporating the desired interaction qualities will be developed as a case study within the domain of kitchen appliances in the digital age.

The demonstrator will be evaluated in order to validate claims made in favor of metaphoric interface design, as well as to gain a more comprehensive understanding of how to elicit satisfactory experiences, specifically within the context of kitchens in the digital age.

Approach

The approach taken towards the accomplishment of the above-mentioned assignment is best characterized as “Research Through Design”.

In an iterative process, prototypes will be developed in order to test individual aspects of metaphoric and/or multimodal interface design. The prototypes will be situated within the context of digitally enabled kitchen appliances and will be investigated with respect to their effectivity in eliciting a sustainable sense of satisfaction and empowerment.

The project will be structured as follows: In an initial immersion phase, the context and future trends pertaining to it will be illuminated. Subsequently, emerging technologies (sensors, materials, actuators, algorithms and services) conducive to the achievement of metaphoric interface design will be investigated. Based on these findings, an iterative process of ideation, prototyping, testing and evaluation will determine the framework for the refinement of one final concept. This final concept will be worked out in greater detail and a demonstrator for evaluatory purposes is to be developed.

Graduation Project results

The outcome of the project will be a blueprint for metaphoric, multimodal interfaces. This will be achieved by the development of a demonstrator situated in the kitchen context.

It is intended to serve as a framework initiating a paradigm shift in the development of technology-humanizing interfaces not only at Gaggenau.

Deliverables

Demonstrator

Relation and relevance to the domain of Industrial Design Engineering, the chosen master direction and the IDE pillars

Within a specific context, this thesis project investigates the way appropriately embodied data can facilitate an intuitive, natural dialogue between the user and complex systems. The interaction being the conductor for this transfer of knowledge, the Dfl relevance is clear. As the nature of this interaction is to be defined by its very own design language, a clear IDE relevance is also given.

Companies such as Gaggenau stand to benefit from resulting insights and developments, as it will help them create value by delivering interfaces that will provide their customers with a more virtuous, long-lasting, transparent and satisfactory experience. Technological advancement is perceived to increase the complexity of the systems we interact with. In this case however, technological advancements are to be leveraged into humanizing their context of application. Instead of abstracting the causal relation of processes, technology is to be used to maintain but translate those relations into a more intelligible form.

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Planning																							
Calendar week	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Project week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Immersion	Context																						
Research		Trends & Devlp.																					
R&D Cycles						Cycle 1		Cycle 2		Cycle 3													
Refinement														Conceptualization									
Demonstrator																	Implementation						
Presentation																							

Further comments and information	
None	

APPROVAL BY CHAIR

Date of approval	
Signature of Chair	

