

flying-v interior

# floorplan design for improved passenger experience

## appendix A-F

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Master Thesis

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# A

## trends and developments concept overview

adaptable seat placement



Recaro

### Flex Seat

With a simple sliding seat concept, seat spacing can be increased for passengers when flights are not fully occupied. To this end, the economy class seat for short- and medium-haul flights is simply folded up, and the front seat rows are then pulled apart like an accordion to increase the seat spacing. This results in significantly more space for passengers.

panel assembly & display



### Lite2Fix

Two modified interfaces on the architecture.  
Acoustically harmonized side panels with integrated shock mounts.  
Side panels are self-adjusting, no horizontal gaps.  
Clicking the LED panel into place closes the power circuit.  
Fully customizable displays – for lighting and passenger information

comfort with reduced space



Since Essential provides a big improvement of in-seat storage, there's no need to have bins in the business class cabin, therefore the smooth, comfortable surfaces that define Essential can extend towards the cabin design, creating a more open and inviting cabin.

### Safran Essential

Essential achieves a full flat bed without the need for a complex seat mechanism, which frees space for the passenger, removes weight from the seat and eliminates the need to provide maintenance to the seat mechanism, reducing operating costs for the airlines. Since the seat does not recline into a bed, there's no need to leave gaps for the seat motion.

Safran

sustainable material meal tray



### Zero

The tray itself has been made from coffee grounds and husks mixed with a lignin binder, and the base containers that fit into the tray have been made from wheat bran.

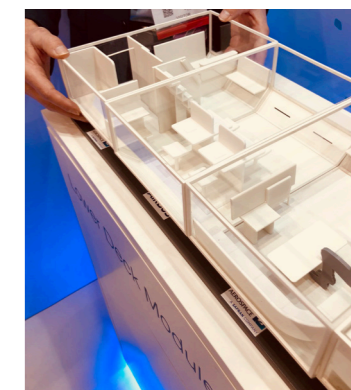
Coconut wood has been used to make the spork – a spoon and a fork combined into one design – while the cup is composed of rice husk mixed with polylactic acid binder, with a cup liner made from algae.

Instead of the small plastic pots used to contain sauces and milk, PriestmanGoode has designed capsules made from soluble seaweed.

"Elements that are currently rotatable (washed and reused), like the tray itself, would continue to be so, and elements that are discarded, like single-use plastic, would be replaced with a sustainable alternative," she added.

PriestmanGoode

modules in cargo Area



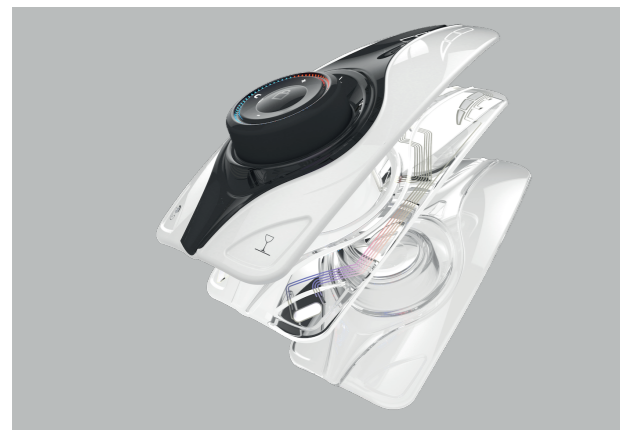
### Lower Deck Pax Experience

The new passenger modules could be easily interchangeable with regular cargo containers if required, as aircraft cargo floors and cargo loading systems would not be affected - the passenger module would sit directly on it

Safran & Airbus



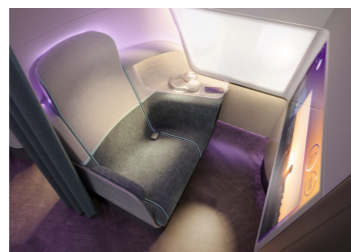
## In-mould Electronics



*e<sub>2</sub>ip brings In-Mold Electronics into the aircraft cabin: the future concept represents a working model demonstrating features*

**e<sub>2</sub>ip** and functions that can be applied to a wide variety of electronic devices including seat or galley insert controls. The IME panel, based on printed electronics, offers a light-weight, interactive smart surface integrated seamlessly into its surroundings with finishes that can be customized with various textures, coatings and colors

## colour indicates cleaning status

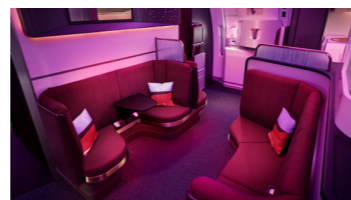


*PriestmanGoode*

### Pure Skies concept

Light and colors play a key role, with different colors signifying whether the aircraft is clean or hasn't been cleaned yet. Once cleaning is complete, peach and yellow colors welcome passengers on board with the peace of mind that the aircraft is clean.

## Social Area



*Virgin Atlantic*

### The Loft - Virgin Atlantic

Virgin Atlantic's Upper Class Loft, created for the airline's first A350-1000, offers the largest social space across any of Virgin Atlantic's fleet. It features mood lighting in the entry area as passengers board, transforming the area to an exclusive lounge and bar for premium class passengers during the flight.

## use of personal devices

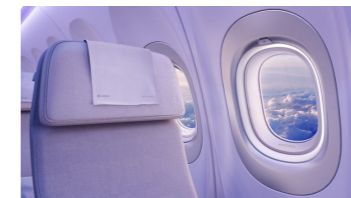


*PriestmanGoode*

### Pure Skies concept

The back of the shells would be customizable to the airline's preference but assumes the removal of in-flight entertainment systems in favor of personal device usage that can be attached to device holders. Enterprising airlines can also use the opportunity to sell devices pre-loaded with content to be used for the flight.

## Adaptable Light Panels

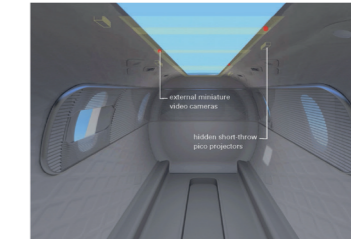


*Airbus*

### Airspace

The right cabin lighting makes an important difference to passengers' experience and enjoyment of flight. The state-of-the-art LED lighting on all Airbus aircraft gives airlines precise control over the cabin lighting, with an infinite number of scenarios available. This means Airbus can support the airlines' own brand, set the right ambience throughout all phases of flight and even reduce jetlag.

## extended windows & video ceiling



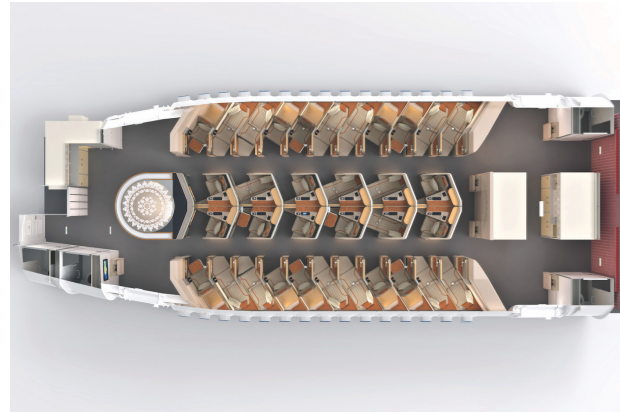
*forakis design leonardo*

### Heli-X

The design for Heli-X, winner of the "Flydeas for the City" competition, emphasizes comfort, transparency, lightness, and efficiency. Advanced digital lighting technologies are seamlessly integrated to augment the feeling of space, serenity, and connectedness with the environment.



## Business Class Layout

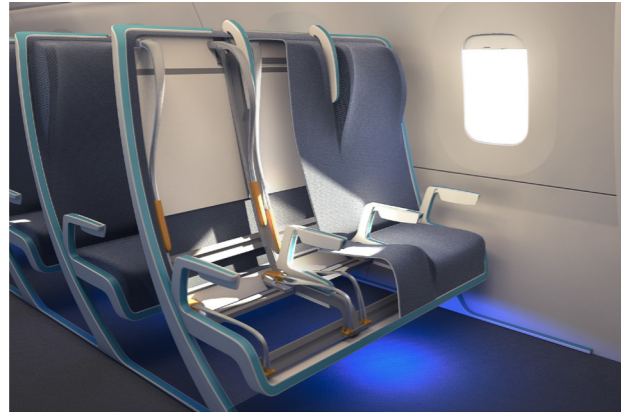


AirGo Design

### Airgo Galaxy

Galaxy is a space-efficient seating arrangement that replaces typical recliners on narrow-body aircrafts with flatbed at 1:1 ratio. With a minimum seat pitch of only 27.6", the new design enables long-range single-aisle aircrafts like A321 to achieve their full potential. Privacy walls can be lowered via a two-way authentication system, offering on-demand suite.

## Adjustable Width Seat

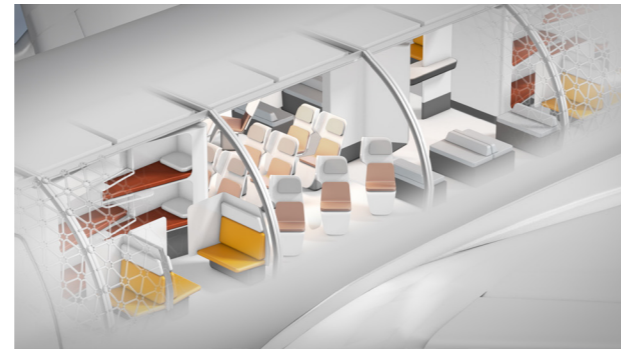


### Morph concept

The basic idea behind the Morph concept is a standard-design, ergonomic, economy class seat that allows for adjustment of the seat width, pan height, and pan depth without reducing seating capacity. In addition, the three-seat economy row can be quickly changed to a two-seat premium row

Seymourpowell

## 'Experience' Modules



Transpose borrows its concept from cargo planes and applies it to passenger planes — the idea being that instead of loading goods into an aircraft, you could load modules with experiences onto the plane.

Airbus

### Transpose

All of this would happen in under an hour, according to the Transpose engineering team, and the mods would be prebuilt with experiences. These would range from coffee shops to co-working spaces, to day cares and spas, or even a cycling studio. Chua says Airbus thinks these modular cabin seats would be priced at the premium economy level, but that's if they maintain the same seating density as a standard aircraft; and ultimately, the airlines will determine pricing.

## Staggered Seating

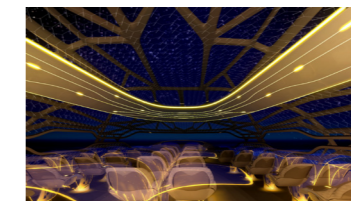
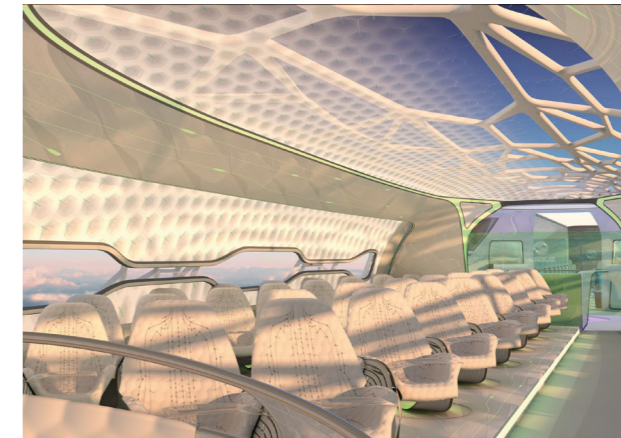


Thompson Aero Seating

### Cozy Suite

Thompson Aero Seating has come up with the Cozy Suite, a new seat design that incorporates a second, side-on headrest as well as individual armrests for passengers. The seat also features a fixed-back shell with a pan seat recline. This means you won't feel the passenger behind you bumping or kicking your seat and, if you recline, the forward-sliding pan means you won't be invading that person's space.

## open ceiling

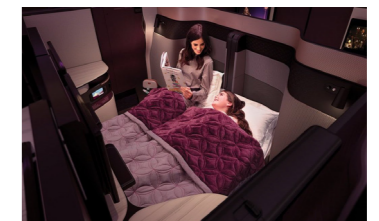


### Airbus Concept Vision

With this bold concept for an innovative, bionically inspired cabin, Airbus demonstrates how they imagine the future of flying through the passenger's eyes. The skeleton-like, high-tech structure helps to significantly reduce the weight. This increases the passenger's comfort level and reduces the machine's fuel consumption, benefitting the environment

Airbus 2016

## 'Experience' Modules



Qatar Airways

### QSuite

Introducing the quad, a private space fully adaptable to you and your companions' requirements.

Whether travelling with family, friends, or business colleagues, movable panels will allow you to transform your space into a social area, allowing you to work, dine or socialise at 40,000 feet. And when you wish to relax or sleep, we transform your space back into your own private room for the ultimate in privacy and comfort



# B

## user experience research questionnaire



### Today's Flying Experience

Hi everyone!

Thanks for wanting to help me! I'm currently working on my graduation thesis for my masters degree Industrial Design Engineering at the TU Delft. For this project I'm exploring possibilities for a (re)design of the layout and interior of the new Flying-V aircraft that the TU Delft is developing in collaboration with Airbus and KLM.

At the moment I'm looking at the passengers' flying experience in current aircrafts to see what could change or could be improved upon. I've made this questionnaire to gain insights into what passengers think and feel when flying.

The questionnaire consists of 8 sections. In the last 7 sections you'll be shown scenario images of your flight and you'll be asked to explain how you think and feel about that part of the flying journey. When answering these questions it'll help to recall the last time you flew by plane. Due to the effect the pandemic has had on our traveling and flying habits, I would like you to use your last flight before the pandemic as reference point for answering these questions.

This questionnaire will take about 30 minutes to fill in, but please take as much (or as little) time as you need. Filling in this questionnaire is anonymous, and the results will only be seen and used for research for my thesis.

Thanks again in advance!

### Today's Flying Experience

\*Vereist

#### Travel Details

This section will ask you some short questions about your demographic, your personal flight experience and your most recent flight.

Age \*

Jouw antwoord \_\_\_\_\_

Gender

- Male
- Female
- I prefer not to say
- Anders: \_\_\_\_\_

Country of origin \*

Jouw antwoord \_\_\_\_\_

How often did you typically travel by plane? \*

Please indicate how often you used to travel before the current flight restrictions due to the COVID-19 pandemic.

- Less than once a year
- Once a year
- Multiple times a year
- Once a month

Which travel class do you usually travel with? \*

- Economy
- Premium Economy
- Business
- First
- Other

When was your last flight? \*

- Less than 6 months ago
- Between 6 months and a year ago
- More than a year ago
- More than 2 years ago

What is / are your main reason(s) for airplane travel? \*

- Business
- Vacation
- Family Visit
- Anders: \_\_\_\_\_

How many other people did you typically travel with? \*

- 0 / Alone
- 1-2
- 3-4
- 4-5
- more than 6
- Anders: \_\_\_\_\_



### Today's Flying Experience

#### How do you feel about these scenarios?

In the next section you will be shown scenario images of different phases of a typical flight. The questions are divided into seven sections: boarding; take-off; cruising; in-seat activities, meal service, and walking; landing; and de-boarding.

Please take some time to look at the scenario images and try to recall the last time you traveled by plane. Preferably, recall the last time you've been on a long-haul flight (+6 hours). If this was too long ago, or if you've only flown short-haul, recalling a shorter flight is perfectly fine as well. For each section you will be asked which emotions you experience.

Vorige

Volgende



(1/7) Boarding

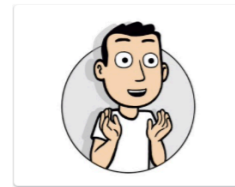


Emotions I experience during this phase \*

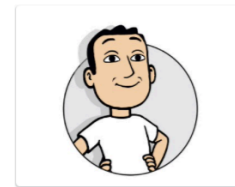
The following question shows several emotions that you might experience during a flight. Please select all emotions that you experience when boarding the plane.



1. Joy / Excitement (blijdschap)



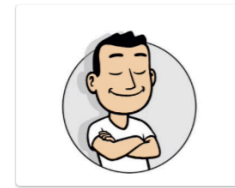
2. Admiration (bewondering)



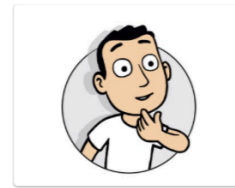
3. Pride (trots)



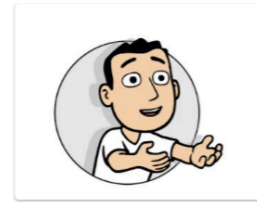
4. Hope (hoop)



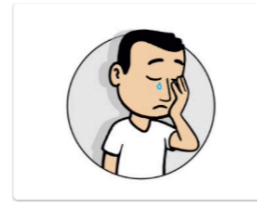
5. Satisfaction / at ease (voldoening, op je gemak)



6. Fascination (fascinatie)



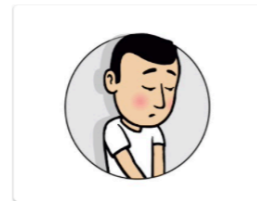
7. Desire (verlangen)



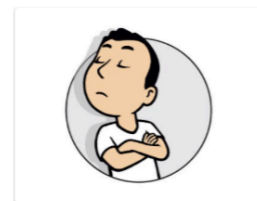
8. Sadness (droefheid)



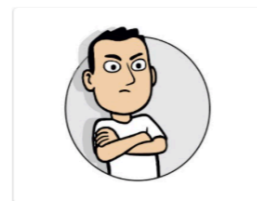
9. Fear (angst, bang)



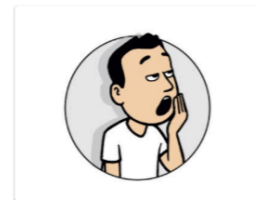
10. Shame (schaamte)



11. Contempt / Stubborn (minachting, eigenwijs)

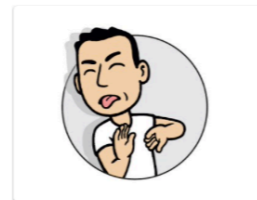


12. Anger / Frustration (boosheid, frustratie)



13. Boredom (verveling)

Anders:



14. Disgust (afkeer, walging)

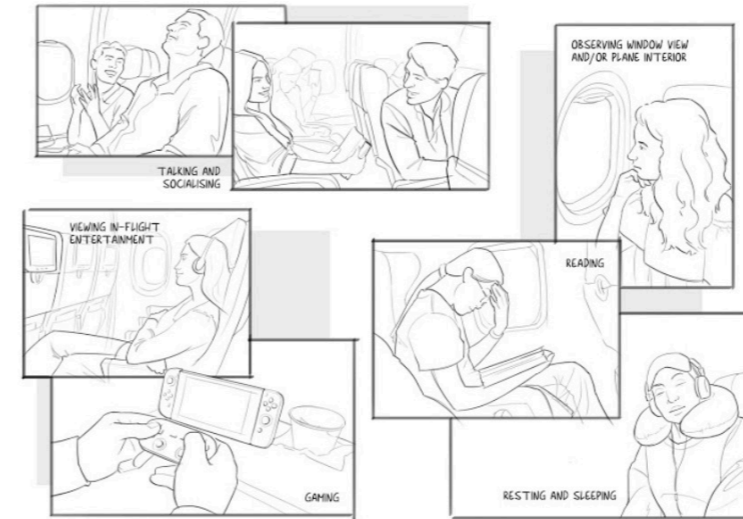
For each of the selected emotions, please explain and elaborate on why you experience them. \*  
For example: 7. Because I'm really excited to go on holiday; 12. because... (you can answer in Dutch if you'd like to)

Jouw antwoord

[Vorige](#)

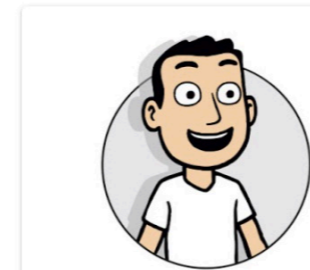
[Volgende](#)

(3/7) Cruising: in-seat activities

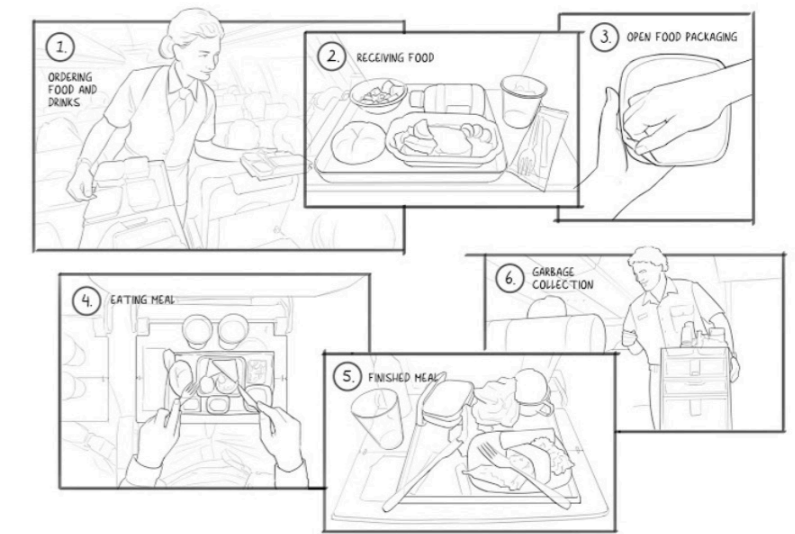


Emotions I experience during this phase \*

The following question shows several emotions that you might experience during a flight. Please select all emotions that you experience when doing the above mentioned activities when flying.

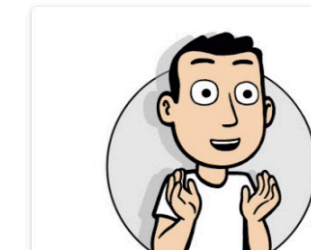


(4/7) Cruising: meal service



Emotions I experience during this phase \*

The following question shows several emotions that you might experience during a flight. Please select all emotions that you experience when ordering, consuming, and disposing of your in-flight meal and/or drinks.



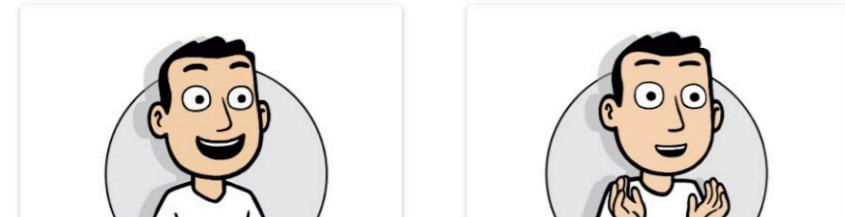


(5/7) Cruising: walking and moving around

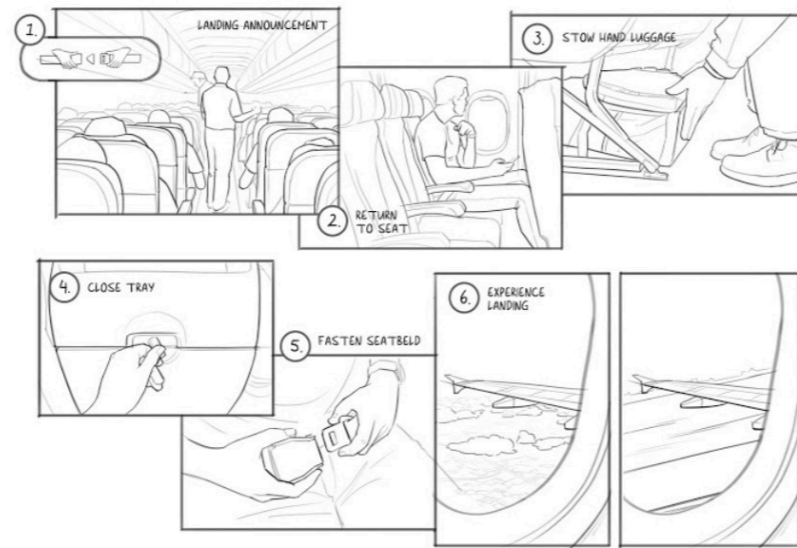


Emotions I experience during this phase \*

The following question shows several emotions that you might experience during a flight. Please select all emotions that you experience when moving about the plane during a flight.



(6/7) Landing



Emotions I experience during this phase \*

The following question shows several emotions that you might experience during a flight. Please select all emotions that you experience when preparing for, and during landing.

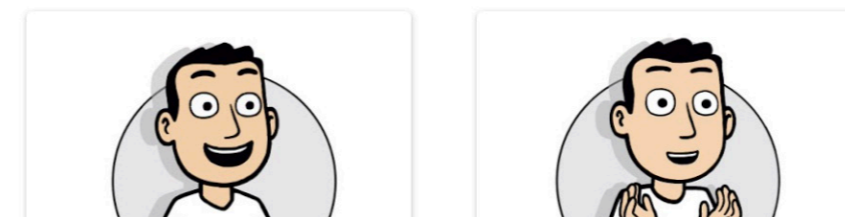


(7/7) De-boarding



Emotions I experience during this phase \*

The following question shows several emotions that you might experience during a flight. Please select all emotions that you experience when de-boarding the plane.



Anything I missed or you'd like to share?

(optional) If there's anything else you'd like to tell me related to your flying experience, please let me know. Thoughts about things that should change, ideas about your ideal flight experience, or funny anecdotes are much appreciated!

Jouw antwoord

Vorige

Volgende

Thank You!

Thanks again for helping me with my research! You can now click the send button.

(optional) If you would like to help me with further research for this thesis please enter your e-mail below.

In a couple of weeks I would like to evaluate several interior concepts through short user interviews. If you're interested in participating in this, that would be very much appreciated! Your e-mail address will not be shared and will only be used by me to contact you.

Jouw antwoord

Vorige

Verzenden





		Boarding	
P.	Timestamp	Emotions	Reasons
1	1/18/2021 20:55:49	4. Hope (hoop),  9. Fear (angst, bang)	4. I hope that the person next to me isn't stinky or sweaty, and is silent and doesn't move around much. Dat ik geen last van ze heb.  9. Maybe more anxious than afraid. I don't like the sensation of flying so much and get nervous for the take-off. This already starts while boarding.
2	1/18/2021 23:20:05	13. Boredom (verveling)	Boredom. Because you've done this before many times. And you have to wait at every part of the boarding procedure...
3	1/18/2021 23:57:59	1. Joy / Excitement (blijdschap),  13. Boredom (verveling)	1. Excited for the upcoming journey and the experience of stepping on the plane and 'starting' your travel.  13. Boredom due to long queues and the time it takes to actually board the plane. The process of getting on the plane usually takes a lot of time, most of which is spent waiting.
4	1/19/2021 21:07:04	1. Joy / Excitement (blijdschap),  5. Satisfaction / at ease (voldoening, op je gemak)	Heel blij om op reis te gaan en ik vind vliegen heel leuk! Daarom de blijdschap. Maar ook het relaxte gevoel, omdat we alles geregeld hebben en nu lekker gaan vliegen naar bestemming.
5	1/21/2021 10:35:02	5. Satisfaction / at ease (voldoening, op je gemak)	Geen angst
6	1/21/2021 11:25:50	5. Satisfaction / at ease (voldoening, op je gemak)	Looking fw to the flight, happy to go, full trust in people of airlines
7	1/21/2021 12:35:49	1. Joy / Excitement (blijdschap),  2. Admiration (bewondering),  5. Satisfaction / at ease (voldoening, op je gemak),  6. Fascination (fascinatie)	1. Because I usually go somewhere nice.  2. Because I am a huge aviation enthusiast.  5. Because I am used to traveling by plane and have full trust in the professionals on board.  6. Again because of be huge fascination for aviation.
8	1/21/2021 12:44:39	1. Joy / Excitement (blijdschap),  5. Satisfaction / at ease (voldoening, op je gemak)	Because I'm really excited to go on holiday ant to fly
9	1/21/2021 13:34:27	4. Hope (hoop)	Hoop dat je een goede plek hebt zonder vervelende en huilende mensen om je heen
10	1/21/2021 17:03:04	9. Fear (angst, bang)	9. Because I still always have a little fear of flying as the plane could possibly crash
11	1/21/2021 19:45:43	1. Joy / Excitement (blijdschap),  4. Hope (hoop)	Blijdschap; omdat ik blij en opgewonden ben om op vakantie te gaan!  En ik hoop dat het een rustige vlucht zal zijn, zonder al te veel turbulentie en eventuele vervelende medepassagiers
12	1/21/2021 20:14:13	1. Joy / Excitement (blijdschap),  2. Admiration (bewondering)	1. Blij dat we op tijd waren en  2. bewondering voor de organisatie rondom het mogelijk maken van het vliegen

		Take-off	
P.	Timestamp	Emotions	Reasons
1	1/18/2021 20:55:49	9. Fear (angst, bang)	I usually don't look at the folders until after take-off. I buckle up immediately and wait for take-off. 9. I am nervous for take-off. I get a bit nauseous.
2	1/18/2021 23:20:05	5. Satisfaction / at ease (voldoening, op je gemak),  6. Fascination (fascinatie)	At ease first. Because after a long time of waiting and shuffling you can sit down eventually. Your luggage stowed.  Every time your plane takes off it's fascinating. It never gets boring...
3	1/18/2021 23:57:59	1. Joy / Excitement (blijdschap),  5. Satisfaction / at ease (voldoening, op je gemak),  6. Fascination (fascinatie)	1. Excitement due to the process of getting in your seat and waiting for takeoff. Its exciting to finally start your journey to your destination point.  5. Satisfaction due to your (my) succes of getting to the airport and plane on time. Further feelings of satisfaction due to the fact that you found your seat, got settled and can rest for the remained of your flight!  6. Fascination with the whole process of taking off and going in the air. Its a feeling of suspension, but mixed with the fascination that makes you want to look out your window to the land below you and the sky above you. Fascination due to being in the air, so to say.
4	1/19/2021 21:07:04	2. Admiration (bewondering)	Altijd vind ik het bijzonder om op te stijgen en dan te vliegen. Blijft elke keer bijzonder!
5	1/21/2021 10:35:02	5. Satisfaction / at ease (voldoening, op je gemak)	Zin in vakantie vooral
6	1/21/2021 11:25:50	1. Joy / Excitement (blijdschap)	We're finally going...looking fw to my destination
7	1/21/2021 12:35:49	1. Joy / Excitement (blijdschap), 2. Admiration (bewondering), 5. Satisfaction / at ease (voldoening, op je gemak), 6. Fascination (fascinatie)	Basically for all the reasons stated before, I am a huge aviation enthusiast and love the feeling I get when flying.
8	1/21/2021 12:44:39	1. Joy / Excitement (blijdschap),  2. Admiration (bewondering)	Het blijft altijd bijzonder te vliegen. Hoe dat vliegtuig in de lucht blijft. Wonderlijk
9	1/21/2021 13:34:27	1. Joy / Excitement (blijdschap)	Blij dat ik onderweg ben naar vakantie
10	1/21/2021 17:03:04	9. Fear (angst, bang)	9. Because I sometimes happen to get sick (vomit) on a plane so I'm scared this might happen
11	1/21/2021 19:45:43	2. Admiration (bewondering),  6. Fascination (fascinatie)	Admiration and fascination; als zo'n groot vliegtuig opstijgt verwondert en fascineert dat elke keer weer
12	1/21/2021 20:14:13	3. Pride (trots),  6. Fascination (fascinatie)	3. trots dat de mens kan vliegen en ook  6. fascinatie voor hetzelfde (3)



		Cruising: in-seat	
P.	Timestamp	Emotions	Reasons
1	1/18/2021 20:55:49	5. Satisfaction / at ease (voldoening, op je gemak),  12. Anger / Frustration (boosheid, frustratie),  13. Boredom (verveling)	5. I am glad we survived take-off. I get relaxed again.  12. Maybe more agitation. I get annoyed by the uncomfortable seat, I get annoyed by other people IMMEDIATELY unbuckling and going to the bathroom and such, I get annoyed by the bright screen of my neighbour passenger, I get annoyed by neighbours who sit very widely (breed zitten, met ellebogen in m'n zij...)  13. Even though I brought sudoku books and magazines and such, I still get bored. I don't like sitting still and feel isolated.
2	1/18/2021 23:20:05	13. Boredom (verveling)  7. Desire (verlangen),	After reading brochures and magazines and watching movies the flight is getting bored.  Then there is desire. To arrive at the destination....
3	1/18/2021 23:57:59	7. Desire (verlangen),  13. Boredom (verveling)	7. Desire to get to your destination, and to begin your vacation (or other activities).  13. Boredom, mostly with flights taking a considerable amount of time (3 hours or more). The feeling of boredom is usually felt after you've spend time on your phone, looked around, read a book etc, and exhausted all activities that may be entertaining to pass the time.
4	1/19/2021 21:07:04	5. Satisfaction / at ease (voldoening, op je gemak),  13. Boredom (verveling)	Ik ben wel lekker rustig en kijk wat om me heen of ga een gesprek met iemand aan.  Afwisselend met wat lezen, wat slapen en ook komt het moment van verveling. Maar dat hoort er ook bij.
5	1/21/2021 10:35:02	5. Satisfaction / at ease (voldoening, op je gemak)	Druk bezig met eigen kinderen ☹
6	1/21/2021 11:25:50	6. Fascination (fascinatie)	Still a special thing flying, that something big and heavy as a plane can fly
7	1/21/2021 12:35:49	5. Satisfaction / at ease (voldoening, op je gemak),  11. Contempt / Stubborn (minachting, eigenwijs)	5. On long haul flight because of the often great comfort even in economy, I can easily entertain myself on a 24h flight in a wide body jet.  11. On short haul flights because of the low comfort, also usually a lot of people do not have respect for the regulations on these flights. This irritates me.
8	1/21/2021 12:44:39	1. Joy / Excitement (blijdschap), 13. Boredom (verveling)	Soms duurt een vlucht mij te lang. Wil dan graag wat anders doen.
9	1/21/2021 13:34:27	5. Satisfaction / at ease (voldoening, op je gemak)	Niets bijzonders gewoon relaxt
10	1/21/2021 17:03:04	5. Satisfaction / at ease (voldoening, op je gemak)	5. Because I enjoy myself on the plane; I am forced to stay seated resulting in me listening to music very focused or watching movies I'd normally not watch, or read a book or magazine for example
11	1/21/2021 19:45:43	5. Satisfaction / at ease (voldoening, op je gemak)	Satisfaction; tijdens een rustige vlucht ben ik ontspannen en tevreden
12	1/21/2021 20:14:13	leergierigheid	leuk om willekeurige onbekende mensen te ontmoeten/spreken

		Cruising: meal service	
P.	Timestamp	Emotions	Reasons
1	1/18/2021 20:55:49	1. Joy / Excitement (blijdschap),  9. Fear (angst, bang),  11. Contempt / Stubborn (minachting, eigenwijs)	1. Yay food! Even though I am probably not hungry at all, I am still excited for something to eat. At least it will limit my boredom.  9. I know my stomach won't handle the airplane food. It is always quite starchy and fatty, and I have a sensitive stomach in general. So I get anxious whether the food will be okay if I eat it. I'm afraid I will get a stomach ache or become nauseous.  11. It always takes sooo long before they pickup the trays after you're done eating. I already feel isolated in the claustrophobic seat, and now I can't even wiggle around in the uncomfortable seat without knowing everything off the table, for it to then disappear into the void of unreachable space underneath my seat.
2	1/18/2021 23:20:05	5. Satisfaction / at ease (voldoening, op je gemak)	Receiving the food is a nice break during a long flight..
3	1/18/2021 23:57:59	1. Joy / Excitement (blijdschap),  4. Hope (hoop),  7. Desire (verlangen)	1. Joy due to the experience of getting a meal. The whole process is kind of a unique experience that you can only find on an airplane. This is due to the excitement of getting something to eat, your hope (4) of getting a good meal, and the whole process of removing the packaging, eating and waiting for the staff to collect your garbage/remainers. Its a very one-of-a-kind experience that you can only find when traveling.  7. Desire for getting something to eat. The emotion fits mostly with the first part of the experience (getting your food).
4	1/19/2021 21:07:04	1. Joy / Excitement (blijdschap), 4. Hope (hoop), 7. Desire (verlangen)	Blijdschap omdat het eten een fijne onderbreking is. En dan natuurlijk hopen dat het lekker is. Ik vind het altijd best oké en leuk verrassend hoe het is ingepakt. Verlangen om te zien hoe het uitdelen gaat en hoe mijn eten er uit ziet.
5	1/21/2021 10:35:02	14. Disgust (afkeer, walging)	Meestal is het eten niet zo lekker aan boord
6	1/21/2021 11:25:50	7. Desire (verlangen)	Hungry!!!
7	1/21/2021 12:35:49	1. Joy / Excitement (blijdschap), 5. Satisfaction / at ease (voldoening, op je gemak), 14. Disgust (afkeer, walging)	1 & 5. Because on some flights the meals are pretty decent and I had low expectations from the beginning.  14. Because sometimes the food is just awful. This differs from airline to airline.
8	1/21/2021 12:44:39	1. Joy / Excitement (blijdschap)	Blij omdat het de reis breekt, en altijd gezellig om wat met anderen te eten.
9	1/21/2021 13:34:27	4. Hope (hoop)	Hoop dat het eten lekker is omdat het nooit zo lekker ruikt als er eten wordt warm gemaakt
10	1/21/2021 17:03:04	1. Joy / Excitement (blijdschap)	1. Because I often like the food that is served on planes and because of time differences I often feel hungry so look forward to meals
11	1/21/2021 19:45:43	4. Hope (hoop), 7. Desire (verlangen)	Hoop en verlangen; ik hoop dat het eten niet teveel tegenvalt en dat de service snel voorbij is. Tafeltjes weer opgeklapt, meer bewegingsruimte. Passagiers rustig zodat ik kan slapen...
12	1/21/2021 20:14:13	verbazing	dat je dat voedsel 'accepteert' (kwaliteit en hoeveelheid) en opeet die je normaalgesproken zou weigeren in bijv. restaurant

		Cruising: moving about	
P.	Timestamp	Emotions	Reasons
1	1/18/2021 20:55:49	–  5. Satisfaction / at ease (voldoening, op je gemak),  12. Anger / Frustration (boosheid, frustratie),  Disappointment	I always make sure to have a seat at the path side. I'd rather be disturbed by my neighbours rather than be the annoying person that has to disturb. 5. I like stretching my legs by walking up and down the path a few times. Though, I'm always anxious that I might disturb others by passing by. I make sure to find a place (often near the toilets) where I can do some stretching. 12. Downside of the path seat is that people will bump into you, and that people will have to pass you. I hate when people just decide to climb over you without notifying you. That invades my personal space and I feel uncomfortable. I'd rather they wake me up so I can just step aside for them to pass. Other, disappointment. I always get excited for a walk around. But then realise there isn't really much walking to be done...
2	1/18/2021 23:20:05	7. Desire (verlangen), 12. Anger / Frustration (boosheid, frustratie), 13. Boredom (verveling)	The longer the flight, the more the frustration. My legs too long and too little room to stretch them. Getting bored again. Longing for the destination...
3	1/18/2021 23:57:59	13. Boredom (verveling),  Hesitation	13. Boredom due to not having anything to do while simultaneously being somewhat uncomfortable due to lack of space. 15 (hesitation). Hesitation due to not wanting to inconvenience other people by getting out of your seat and them having to get up for you twice (leave from seat and returning to seat). Furthermore it sometimes makes me a little uncomfortable to walk in the aisle with everyone staring at you.
4	1/19/2021 21:07:04	13. Boredom (verveling), Lichte geïrriteerdheid.  Annoyed	Het is heel saai om te lopen naar toilet. Alles is krap en weinig leuk. Het is ook niet mooi ofzo. Kan geïrriteerd raken als mensen voor me hun stoel naar achteren doen, waardoor ik nog minder ruimte heb. Verder is het prima.
5	1/21/2021 10:35:02	Het zit behoorlijk krap met mijn lange benen	Ik vind het best irritant dat ik meer moet betalen voor meer beenruimte dan iemand die kleiner is. Economyclass zou best is minder opgepropt kunnen (vooral langere vluchten)
6	1/21/2021	5. Satisfaction / at ease (voldoening, op je gemak)	Full trust in pilot
7	1/21/2021 12:35:49	2. Admiration (bewondering), 5. Satisfaction / at ease (voldoening, op je gemak),  12. Anger / Frustration (boosheid, frustratie)	2 & 5. Because I always take a little walk on a flight because it's better for my back. I am prepared on not moving a lot, but realising the sheer size and great engineering while walking makes me happy. 12. because on many short haul flights its not always possible to walk around without making already irritated passengers more irritated.
8	1/21/2021	5. Satisfaction / at ease (voldoening, op je gemak)	Fijn om soms even je benen te kunnen strekken. Anders duurt de reis wel heel lang.
9	1/21/2021	6. Fascination (fascinatie)	Interessant om te zien wat andere mensen in het vliegtuig doen en hoe ze er uit zien
10	1/21/2021 17:03:04	13. Boredom (verveling)	13. Usually when I walk on the plane it's out of boredom or just to stretch my legs, it's not really like I get to see something amazing so I consider it rather boring
11	1/21/2021 19:45:43	2. Admiration (bewondering), 5. Satisfaction / at ease (voldoening, op je gemak), 13. Boredom (verveling)	Admiration; altijd weer onder de indruk van zo'n machtig vliegtuig met al die pax erin. At ease; ontspannen onderdeel van de vlucht. Boredom; pfff, het duurt nog zo lang voordat we er zijn( long haul)
12	1/21/2021	5. Satisfaction / at ease (voldoening, op je gemak)	heerlijk om even de benen te strekken

		Landing	
P.	Timestamp	Emotions	Reasons
1	1/18/2021 20:55:49	2. Admiration (bewondering),  9. Fear (angst, bang)	2. The view outside is always fun. I especially like when it's dark and you can see al the city lights and such. It leaves a bit of mystery to the destination until it is daylight the next day. 9. I don't like the sensation of landing. I get anxious and nervous.
2	1/18/2021 23:20:05	1. Joy / Excitement (blijdschap), 3. Pride (trots), 4. Hope (hoop)	Joy at arrival. Proud of myself, enduring the long flight. Hoping the suitcases are coming soon...
3	1/18/2021 23:57:59	1. Joy / Excitement (blijdschap),  7. Desire (verlangen), Nervousness (15) and  Impatience (16)	1. Excitement of the plane landing, since you've finally reached your destination and completed your flight. 7. Desire to finally get out of your cramped seat and to freely stretch your legs again. 15 (nervousness). A nervous feeling due to the whole hassle of everyone getting up before the doors have opened, making the space feel very cramped and stuffed. 16 (impatience). Impatience due to the desire to get out of your seat and leave the plane, since the process of offloading (getting out) usually takes up a large amount of time.
4	1/19/2021 21:07:04	1. Joy / Excitement (blijdschap), 9. Fear (angst, bang)	Blijdschap omdat we bijna op bestemming zijn. Maar angstig, omdat ik landen altijd heel spannend vind. Als we maar niet te hard op de grond komen.
5	1/21/2021 10:35:02	9. Fear (angst, bang)	Opstijgen en dalen vind ik best spannend nog elke keer
6	1/21/2021 11:25:50	1. Joy / Excitement (blijdschap)	Almost there!!
7	1/21/2021 12:35:49	1. Joy / Excitement (blijdschap), 2. Admiration (bewondering), 5. Satisfaction / at ease (voldoening, op je gemak), 6. Fascination (fascinatie)	1, 2, 5 & 6. Because I am very aware of what's going on in the cockpit, noticing the great decision making and skill in the cockpit during the landing is simply admirable.
8	1/21/2021 12:44:39	1. Joy / Excitement (blijdschap), 5. Satisfaction / at ease (voldoening, op je gemak)	Altijd heerlijk om die krachten te voelen als je land
9	1/21/2021 13:34:27	4. Hope (hoop)	Hoop dat er niets gek gebeurd met de landing toch altijd spannend
10	1/21/2021 17:03:04	2. Admiration (bewondering)	2. Because I admire the work of the pilot, I'm always happy being back on the ground
11	1/21/2021 19:45:43	1. Joy / Excitement (blijdschap), 2. Admiration (bewondering), 3. Pride (trots), 4. Hope (hoop), 6. Fascination (fascinatie), 9. Fear (angst, bang)	Joy; de vakantie kan nu snel beginnen.  Hope; als het ook dit keer maar goed gaat. Fascination; als er geremd wordt geeft dat een machtig geluid. Fear; de meeste ongelukken gebeuren met de landing...
12	1/21/2021 20:14:13	1. Joy / Excitement (blijdschap), 2. Admiration (bewondering), 3. Pride (trots), 6. Fascination (fascinatie), Respect	elke keer opnieuw verbaasd dat zo'n enorm gevaarte veilig op de grond komt, en respect voor de piloot



		<b>Deboarding</b>	
P.	Timestamp	Emotions	Reasons
1	1/18/2021 20:55:49	5. Satisfaction / at ease (voldoening, op je gemak),  11. Contempt / Stubborn (minachting, eigenwijs)	5. Glad we landed. Excited to see the airport and collect luggage. Also a bit weemoedig (wat is dat in het Engels?), the journey isn't over yet... What if the luggage isn't there? Where to get the rental car? Or how to get a taxi? I'm tired but all the rompslomp will still take so long...  11. People unbuckling immediately and standing up while there is literally nowhere to go. Sit the heck down and wait for your turn. I get annoyed by this behaviour.
2	1/18/2021 23:20:05	1. Joy / Excitement (blijdschap), 2. Admiration (bewondering), 5. Satisfaction / at ease (voldoening, op je gemak), 7. Desire (verlangen)	Satisfied and joy because we 're there.  Desire to get out of the plane, hoping it won't take long.  Admiration for the crew, making the flight as comfy as possible, doing this every flight.
3	1/18/2021 23:57:59	12. Anger / Frustration (boosheid, frustratie)	12. Frustration due to people getting out of their seats before the doors have even opened, creating a human traffic jam in the middle of the airplane aisle. This makes the space feel very small and cramped.
4	1/19/2021 21:07:04	7. Desire (verlangen),  13. Boredom (verveling)	Verlangen om naar buiten te gaan.  Maar verveling omdat het lang duurt, mensen soms dringen. Het duurt al met al altijd best lang.
5	1/21/2021 10:35:02	5. Satisfaction / at ease (voldoening, op je gemak)	Prima
6	1/21/2021 11:25:50	12. Anger / Frustration (boosheid, frustratie)	Want to get out!! Always takes too long
7	1/21/2021 12:35:49	12. Anger / Frustration (boosheid, frustratie), 14. Disgust (afkeer, walging)	12&14. The absolute disrespect for regulations from some other passengers disgust me.
8	1/21/2021 12:44:39	13. Boredom (verveling)	Altijd wachten tot iedereen zn spullen heeft. En er zijn altijd mensen die (denken) haast te hebben en daardoor voor kruipen of duwen
9	1/21/2021 13:34:27	1. Joy / Excitement (blijdschap)	Eindelijk in het nieuwe land en lekker vakantie vieren
10	1/21/2021 17:03:04	12. Anger / Frustration (boosheid, frustratie)	12. Because I often get frustrated when people want to rush out of the plane
11	1/21/2021 19:45:43	1. Joy / Excitement (blijdschap),  5. Satisfaction / at ease (voldoening, op je gemak)	Joy; vakantie gaat nu echt beginnen.  At ease; het was wederom een prima vlucht!
12	1/21/2021 20:14:13	5. Satisfaction / at ease (voldoening, op je gemak), 14. Disgust (afkeer, walging)	blij dat je veilig op de grond bent en met afkeer kijk ik naar het egoïstische gedrag van mensen om er al eerste / snelste uit te rennen om vervolgens samen weer bij de bagageband te staan

		<b>Additional comments</b>
P.	Timestamp	Comments
1	1/18/2021 20:55:49	The amount of legspace or width of the seat are annoying, but the claustrofobic feeling of the seat in front of you being too close to your face, the ceiling too low, and the light too spot-light-y is what makes the flight particularly uncomfortable for me. I'd rather even have a clear overview and space in front of my face than more legspace.  After the flight it always feels like your travel is done. However that's not true at all. There is still so much to arrange and retrieve after landing. But every time I get tricked into thinking "we have landed, now the traveling is complete". I don't like that feeling. It is unfair.  I would love to have more walking routes in the plane. Rather than the 15 rows up and down the path, I would like to be able to walk in a loop, or maybr walk somewhere to see/do something. Just so the walks are less disappointing.
2	1/18/2021 23:20:05	perhaps it is good to indicate patience as a possible option in the questionnaire?
3	1/18/2021 23:57:59	I have no idea if this is applies to your research, but the most annoying thing is, in my opinion, the method of serving drinks. Staff usually go around with this big cart full of drinks that takes up the while aisle, making it impossible to move past them. This makes it so that you always have to wait for them to serve the whole plane before you can get up and reach the toilets. Its not the biggest problem in the world, but its always a thing that inconveniences me whenever I get on an airplane.  Thanks!!
4	1/19/2021 21:07:04	Ik weet niet of het mogelijk is, maar meer sfeer in een vliegtuig!
5	1/21/2021 10:35:02	
6	1/21/2021 11:25:50	
7	1/21/2021 12:35:49	Even though I don't have any problems with entertaining myself on many flights doesn't mean there isn't room for improvements. Even though the flight itself is fine, after a flight I am usually very tired. However the B787, A350 and A380 in some configurations deal with these problems very well.
8	1/21/2021 12:44:39	
9	1/21/2021 13:34:27	
10	1/21/2021 17:03:04	Change: having more space to sit but not having to pay more
11	1/21/2021 19:45:43	
12	1/21/2021 20:14:13	Grappig dat met elkaar vliegen een soort band scheidt. Ik heb vreemde mensen gesproken die je vrijelijk de meest intieme dingen vertelden tijdens de vlucht. Wellicht omdat ze er vanuit gaan jou nooit weer te zien? ;-)

## Boarding

1. Joy / Excitement	
3	Excited for the upcoming journey and the experience of stepping on the plane and 'starting' your travel.
4	Heel blij om op reis te gaan en ik vind vliegen heel leuk!H Daarom de blijdschap.
7	Because I usually go somewhere nice.
8	Because I'm really excited to go on holiday ant to fly
11	Blijdschap; omdat ik blij en opgewonden ben om op vakantie te gaan!
12	Blij dat we op tijd waren

2. Admiration (bewondering)	
7	Because I am a huge aviation enthusiast.
12	Bewondering voor de organisatie rondom het mogelijk maken van het vliegen

4. Hope (hoop)	
1	I hope that the person next to me isn't stinky or sweaty, and is silent and doesn't move around much. Dat ik geen last van ze heb.
9	Hoop dat je een goede plek hebt zonder vervelende en huilende mensen om je heen
11	En ik hoop dat het een rustige vlucht zal zijn, zonder al te veel turbulentie en eventuele vervelende medepassagiers ☺

5. Satisfaction / at ease (voldoening, op je gemak)	
4	Maar ook het relaxte gevoel, omdat we alles geregeld hebben en nu lekker gaan vliegen naar bestemming.
5	Geen angst
6	Looking fw to the flight, happy to go, full trust in people of airlines
7	Because I am used to traveling by plane and have full trust in the professionals on board.
8	Because I'm really excited to go on holiday ant to fly

6. Fascination (fascinatie)	
7	Again because of be huge fascination for aviation.

9. Fear (angst, bang)	
1	Maybe more anxious than afraid. I don't like the sensation of flying so much and get nervous for the take-off. This already starts while boarding.
10	Because I still always have a little fear of flying as the plane could possibly crash

13. Boredom (verveling)	
2	Boredom. Because you've done this before many times. And you have to wait at every part of the boarding procedure...
3	Boredom due to long queues and the time it takes to actually board the plane. The process of getting on the plane usually takes a lot of time, most of which is spent waiting.

## Take-off

1. Joy / Excitement	
3	Excitement due to the process of getting in your seat and waiting for takeoff. Its exciting to finally start your journey to your destination point.
6	We're finally going...looking fw to my destination
7	Basically for all the reasons stated before, I am a huge aviation enthusiast and love the feeling I get when flying.
8	Het blijft altijd bijzonder te vliegen. Hoe dat vliegtuig in de lucht blijft. Wonderlijk
9	Blij dat ik onderweg ben naar vakantie

2. Admiration (bewondering)	
4	Altijd vind ik het bijzonder om op te stijgen en dan te vliegen. Blijft elke keer bijzonder!
7	Basically for all the reasons stated before, I am a huge aviation enthusiast and love the feeling I get when flying.
8	Het blijft altijd bijzonder te vliegen. Hoe dat vliegtuig in de lucht blijft. Wonderlijk
11	Admiration and fascination; als zo'n groot vliegtuig opstijgt verwondert en fascineert dat elke keer weer

3. Pride (trots)	
12	3. trots dat de mens kan vliegen en ook

5. Satisfaction / at ease (voldoening, op je gemak)	
2	At ease first. Because after a long time of waiting and shuffling you can sit down eventually. Your luggage stowed.
3	Satisfaction due to your (my) succes of getting to the airport and plane on time. Further feelings of satisfaction due to the fact that you found your seat, got settled and can rest for the remained of your flight!
5	Zin in vakantie vooral
7	Basically for all the reasons stated before, I am a huge aviation enthusiast and love the feeling I get when flying.

6. Fascination (fascinatie)	
2	Every time your plane takes off it's fascinating. It never gets boring...
3	6. Fascination with the whole process of taking off and going in the air. Its a feeling of suspension, but mixed with the fascination that makes you want to look out your window to the land below you and the sky above you. Fascination due to being in the air, so to say.
7	Basically for all the reasons stated before, I am a huge aviation enthusiast and love the feeling I get when flying.
11	Admiration and fascination; als zo'n groot vliegtuig opstijgt verwondert en fascineert dat elke keer weer
12	Trots dat de mens kan vliegen en ook fascinatie voor hetzelfde (3, pride).

9. Fear (angst, bang)	
1	I am nervous for take-off. I get a bit nauseous.
10	Because I sometimes happen to get sick (vomit) on a plane so I'm scared this might happen.

Additional	
1	I usually don't look at the folders until after take-off. I buckle up immediately and wait for take-off.



## Cruising: in-seat

1. Joy / Excitement	
8	– Soms duurt een vlucht mij te lang. Wil Dam graag wat anders doen.

5. Satisfaction / at ease (voldoening, op je gemak)	
1	I am glad we survived take-off. I get relaxed again.
4	Ik ben wel lekker rustig en kijk wat om me heen of ga een gesprek met iemand aan.
	Druk bezig met eigen kinderen
7	On long haul flight because of the often great comfort even in economy, I can easily entertain myself on a 24h flight in a wide body jet.
9	Niets bijzonders gewoon relaxt
10	Because I enjoy myself on the plane; I am forced to stay seated resulting in me listening to music very focused or watching movies I'd normally not watch, or read a book or magazine for example
11	Tijdens een rustige vlucht ben ik ontspannen en tevreden

6. Fascination (fascinatie)	
6	Still a special thing flying, that something big and heavy as a plane can fly

7. Desire (verlangen)	
2	(After reading brochures and magazines and watching movies the flight is getting bored). Then there is desire. To arrive at the destination...
3	7. Desire to get to your destination, and to begin your vacation (or other activities).

11. Contempt (stubborn)	
7	11. On short haul flights because of the low comfort, also usually a lot of people do not have respect for the regulations on these flights. This irritates me.

12. Anger / Frustration (boosheid, frustratie)	
1	Maybe more agitation. I get annoyed by the uncomfortable seat, I get annoyed by other people IMMEDIATELY unbuckling and going to the bathroom and such, I get annoyed by the bright screen of my neighbour passenger, I get annoyed by neighbours who sit very widely (breed zitten, met ellebogen in m'n zij...)

13. Boredom (verveling)	
1	13. Even though I brought sudoku books and magazines and such, I still get bored. I don't like sitting still and feel isolated.
2	After reading brochures and magazines and watching movies the flight is getting bored.
3	13. Boredom, mostly with flights taking a considerable amount of time (3 hours or more). The feeling of boredom is usually felt after you've spend time on your phone, looked around, read a book etc, and exhausted all activities that may be entertaining to pass the time.
4	Afwisselend met wat lezen, wat slapen en ook komt het moment van verveling. Maar dat hoort er ook bij.
8	Soms duurt een vlucht mij te lang. Wil dan graag wat anders doen.

Additional		
12	leergierig	leuk om willekeurige onbekende mensen te ontmoeten/spreken

## Cruising: meal service

1. Joy / Excitement	
1	1. Yay food! Even though I am probably not hungry at all, I am still excited for something to eat. At least it will limit my boredom.
3	Joy due to the experience of getting a meal. The whole process is kind of a unique experience that you can only find on an airplane. This is due to the excitement of getting something to eat, your hope (4) of getting a good meal, and the whole process of removing the packaging, eating and waiting for the staff to collect your garbage/remainers. Its a very one-of-a-kind experience that you can only find when traveling.
4	Blijdschap omdat het eten een fijne onderbreking is. En dan natuurlijk hopen dat het lekker is. Ik vind het altijd best oké en leuk verrassend hoe het is ingepakt.
7	(and 5) Because on some flights the meals are pretty decent and I had low expectations from the beginning.
8	Blij omdat het de reis breekt, en altijd gezellig om wat met anderen te eten.
10	1. Because I often like the food that is served on planes and because of time differences I often feel hungry so look forward to meals

4. Hope (hoop)	
3	This is due to the excitement of getting something to eat, your hope (4) of getting a good meal, and the whole process of removing the packaging, eating and waiting for the staff to collect your garbage/remainers. Its a very one-of-a-kind experience that you can only find when traveling.
4	Blijdschap omdat het eten een fijne onderbreking is. En dan natuurlijk hopen dat het lekker is
9	Hoop dat het eten lekker is omdat het nooit zo lekker ruikt als er eten wordt warm gemaakt
11	ik hoop dat het eten niet teveel tegenvalt en dat de service snel voorbij is. Tafeltjes weer opgeklapt, meer bewegingsruimte. Passagiers rustig zodat ik kan slapen...

5. Satisfaction / at ease (voldoening, op je gemak)	
7	1 & 5. Because on some flights the meals are pretty decent and I had low expectations from the beginning.

7. Desire (verlangen)	
3	7. Desire for getting something to eat. The emotion fits mostly with the first part of the experience (getting your food).
4	Verlangen om te zien hoe het uitdelen gaat en hoe mijn eten er uit ziet.
6	Hungry!!!
11	Ik hoop dat het eten niet teveel tegenvalt en dat de service snel voorbij is. Tafeltjes weer opgeklapt, meer bewegingsruimte. Passagiers rustig zodat ik kan slapen...

9. Fear (angst, bang)	
1	9. I know my stomach won't handle the airplane food. It is always quite starchy and fatry, and I have a sensitive stomach in general. So I get anxious whether the food will be okay if I eat it. I'm afraid I will get a stomach ache or become nauseous.

11. Contempt (stubborn)	
1	11. It always takes sooo long before they pickup the trays after you're done eating. I already feel isolated in the claustrophobic seat, and now I can't even wiggle around in the uncomfortable seat without knowing everything off the table, for it to then disappear into the void of unreachable space underneath my seat.

14. Disgust (afkeer / walging)	
5	Meestal is het eten niet zo lekker aan boord
7	Because sometimes the food is just awful. This differs from airline to airline.

Additional		
12	Verbazing	dat je dat voedsel 'accepteert' (kwaliteit en hoeveelheid) en opeet die je normaalgesproken zou weigeren in bijv. restaurant

## Cruising: moving about

2. Admiration (bewondering)	
7	2 & 5. Because I always take a little walk on a flight because it's better for my back. I am prepared on not moving a lot, but realising the sheer size and great engineering while walking makes me happy.
11	Admiration; altijd weer onder de indruk van zo'n machtig vliegtuig met al die passagiers erin.

5. Satisfaction / at ease (voldoening, op je gemak)	
1	5. I like stretching my legs by walking up and down the path a few times. Though, I'm always anxious that I might disturb others by passing by. I make sure to find a place (often near the toilets) where I can do some stretching.
6	Full trust in pilot
7	2 & 5. Because I always take a little walk on a flight because it's better for my back. I am prepared on not moving a lot, but realising the sheer size and great engineering while walking makes me happy.
8	Fijn om soms even je benen te kunnen strekken. Anders duurt de reis wel heel lang.
11	At ease; ontspannen onderdeel van de vlucht
5	heerlijk om even de benen te strekken

6. Fascination (fascinatie)	
9	Interessant om te zien wat andere mensen in het vliegtuig doen en hoe ze er uit zien

7. Desire (verlangen)	
2	The longer the flight, the more the frustration. My legs too long and too little room to stretch them. Getting bored again. Longing for the destination...

12. Anger / Frustration (boosheid, frustratie)	
1	Downside of the path seat is that people will bump into you, and that people will have to pass you. I hate when people just decide to climb over you without notifying you. That invades my personal space and I feel uncomfortable. I'd rather they wake me up so I can just step aside for them to pass.
2	The longer the flight, the more the frustration. My legs too long and too little room to stretch them. Getting bored again. Longing for the destination...

13. Boredom (verveling)	
2	The longer the flight, the more the frustration. My legs too long and too little room to stretch them. Getting bored again. Longing for the destination...
3	13. Boredom due to not having anything to do while simultaneously being somewhat uncomfortable due to lack of space.
4	Het is heel saai om te lopen naar toilet. Alles is krap en weinig leuk. Het is ook niet mooi ofzo. Kan geïrriteerd raken als mensen voor me hun stoel naar achteren doen, waardoor ik nog minder ruimte heb. Verder is het prima.
10	13. Usually when I walk on the plane it's out of boredom or just to stretch my legs, it's not really like I get to see something amazing so I consider it rather boring
11	Boredom; pfff, het duurt nog zo lang voordat we er zijn( long haul)

Additional		
1		I always make sure to have a seat at the path side. I'd rather be disturbed by my neighbours rather than be the annoying person that has to disturb.
1	Disappointment	Other, disappointment. I always get excited for a walk around. But then realise there isn't really much walking to be done...
3	Hesitation	15 (hesitation). Hesitation due to not wanting to inconvenience other people by getting out of your seat and them having to get up for you twice (leave from seat and returning to seat). Furthermore it sometimes makes me a little uncomfortable to walk in the aisle with everyone staring at you.
4	Annoyed	Kan geïrriteerd raken als mensen voor me hun stoel naar achteren doen, waardoor ik nog minder ruimte heb. Verder is het prima.
5		Het zit behoorlijk krap met mijn lange benen. Ik vind het best irritant dat ik meer moet betalen voor meer beenruimte dan iemand die kleiner is. Economy class zou best is minder opgepropt kunnen (vooral langere vluchten)

## Landing

1. Joy / Excitement	
2	Joy at arrival.
3	1. Excitement of the plane landing, since you've finally reached your destination and completed your flight.
4	Blijdschap omdat we bijna op bestemming zijn.
6	Almost there!!
7	1, 2, 5 & 6. Because I am very aware of what's going on in the cockpit, noticing the great decision making and skill in the cockpit during the landing is simply admirable.
8	Altijd heerlijk om die krachten te voelen als je land
11	Joy; de vakantie kan nu snel beginnen.
12	elke keer opnieuw verbaasd dat zo'n enorm gevaarte veilig op de grond komt, en respect voor de piloot

2. Admiration (bewondering)	
1	2. The view outside is always fun. I especially like when it's dark and you can see al the city lights and such. It leaves a bit of mystery to the destination until it is daylight the next day.
7	1, 2, 5 & 6. Because I am very aware of what's going on in the cockpit, noticing the great decision making and skill in the cockpit during the landing is simply admirable.
10	2. Because I admire the work of the pilot, I'm always happy being back on the ground
11	Admiration and pride; knap om zo'n groot vliegtuig veilig te landen en trots op de KLM.
12	elke keer opnieuw verbaasd dat zo'n enorm gevaarte veilig op de grond komt, en respect voor de piloot

3. Pride (trots)	
2	Proud of myself, enduring the long flight.
11	Admiration and pride; knap om zo'n groot vliegtuig veilig te landen en trots op de KLM.
12	elke keer opnieuw verbaasd dat zo'n enorm gevaarte veilig op de grond komt, en respect voor de piloot

4. Hope (hoop)	
2	Hoping the suitcases are coming soon...
9	Hoop dat er niets gek gebeurd met de landing toch altijd spannend
11	Hope; als het ook dit keer maar goed gaat.

5. Satisfaction / at ease (voldoening, op je gemak)	
7	1, 2, 5 & 6. Because I am very aware of what's going on in the cockpit, noticing the great decision making and skill in the cockpit during the landing is simply admirable.
8	Altijd heerlijk om die krachten te voelen als je land

6. Fascination (fascinatie)	
7	1, 2, 5 & 6. Because I am very aware of what's going on in the cockpit, noticing the great decision making and skill in the cockpit during the landing is simply admirable.
11	Fascination; als er geremd wordt geeft dat een machtig geluid.
12	elke keer opnieuw verbaasd dat zo'n enorm gevaarte veilig op de grond komt, en respect voor de piloot

9. Fear (angst, bang)	
1	9. I don't like the sensation of landing. I get anxious and nervous.
4	Maar angstig, omdat ik landen altijd heel spannend vind. Als we maar niet te hard op de grond komen.
5	Opstijgen en dalen vind ik best spannend nog elke keer
11	Fear; de meeste ongelukken gebeuren met de landing...

Additional		
3	Nervous	A nervous feeling due to the whole hassle of everyone getting up before the doors have opened, making the space feel very cramped and stuffed.
3	Impatience	16 (impatience). Impatience due to the desire to get out of your seat and leave the plane, since the process of offloading (getting out) usually takes up a large amount of time.



## De-boarding

1. Joy / Excitement	
2	Satisfied and joy because we 're there.
9	Eindelijk in het nieuwe land en lekker vakantie vieren
11	Joy; vakantie gaat nu echt beginnen.

2. Admiration (bewondering)	
2	Admiration for the crew, making the flight as comfy as possible, doing this every flight.

5. Satisfaction / at ease (voldoening, op je gemak)	
1	5. Glad we landed. Excited to see the airport and collect luggage. Also a bit weemoedig (wat is dat in het Engels?), the journey isn't over yet... What if the luggage isn't there? Where to get the rental car? Or how to get a taxi? I'm tired but all the rompslomp will still take so long...
2	Satisfied and joy because we 're there.
5	Prima
11	At ease; het was wederom een prima vlucht!
12	blij dat je veilig op de grond ben

7. Desire (verlangen)	
2	Desire to get out of the plane, hoping it won't take long.
7	Verlangen om naar buiten te gaan.

11. Contempt (stubborn)	
1	11. People unbuckling immediately and standing up while there is literally nowhere to go. Sit the heck down and wait for your turn. I get annoyed by this behaviour.

12. Anger / Frustration (boosheid, frustratie)	
3	12. Frustration due to people getting out of their seats before the doors have even opened, creating a human traffic jam in the middle of the airplane aisle. This makes the space feel very small and cramped.
6	Want to get out!! Always takes too long
7	12&14. The absolute disrespect for regulations from some other passengers disgust me.
10	12. Because I often get frustrated when people want to rush out of the plane

13. Boredom (verveling)	
4	Maar verveling omdat het lang duurt, mensen soms dringen. Het duurt al met al altijd best lang.
8	Altijd wachten tot iedereen zn spullen heeft. En er zijn altijd mensen die (denken) haast te hebben en daardoor voor kruipen of duwen

14. Disgust (afkeer / walging)	
7	12&14. The absolute disrespect for regulations from some other passengers disgust me.
12	blij dat je veilig op de grond bent en met afkeer kijk ik naar het egoïstische gedrang van mensen om er al eerste / snelste uit te rennen om vervolgens samen weer bij de bagageband te staan

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## design directions assessment

### Design Direction 1: Shifted seats

Theme	Criteria	Description	G/Y/R	Comments
Improving passenger comfort	Privacy	The floorplan concept improves passenger privacy. Privacy is improved for individual travelers as well as group travelers of different group sizes.	Green	Seats in the middle aisle offer more privacy for different group sizes. Rows on the sides can also be staggered to create individual seats with more privacy.
	Legroom	Legroom is improved for all seats. Or there is sufficient variety in legroom across seats, allowing passengers to choose seats they prefer.	Green	Staggering the rows on the sides will improve legroom for those seats. Even though legroom in the middle rows is similar to conventional seating, some seats (ones beside the aisle) will offer slightly more legroom. Research into how these seats intervere with people walking along the aisle needs to be conducted.
	Sleeping	Comfort of sleeping on the plane is improved compared to regular economy seating, or passengers have sufficient options to choose seats or beds with improved sleeping comfort.	Yellow	Partitions can be placed between the staggered seats for passengers to rest their head against. However, this closely respembles conventional seating and only slightly improves sleeping comfort.
	Moving around	The floorplan allows passengers to stretch their legs and move around the plane. The walking route is more entertaining or engaging than in current aircrafts.	Yellow	The proposed concept does not improve the experience of walking around the plane remarkably. However, the unconventional layout already makes the interior more inviting to walk around than conventional aircrafts. Additional concepts can be added to improve this.
	Entertainment	Boredom is relieved in some other way than walking around. For example: different food service, additional forms of IFE.)	Yellow	The proposed design does not improve this remarkably. Entertaining concepts can be added to improve this.



Crew comfort & concerns	Galley access	Crew can easily enter and exit the galleys. Seats are comfortably reachable from the galleys during meal service.	Galley placement is similar to existing layouts, and galley exists are clear from seats.
	Separation from passengers	Galleys and crew areas are sufficiently separated from the passengers. Preventing passengers from entering the galley or crew area during cruising, especially during meal service.	People walk through the galley to reach their seat. An improvement would be to close the galley of during cruising, but a different walking route for passengers would need to be present (which currently already is).
	Food serving	When serving food, crew can access passenger seats from the aisle with less than 2 seat in between. (So rows of 4 seats need galleys on both sides. At maximum, a row of three seats can be accessed from one aisle.)	Rows of 4 bordering only one aisle are currently located at the front of the plane. This section would have to be adjusted or an aisle would have to be added.
	Crew seating	It is expected that there is enough space for placement of additional crew seating in the galleys or nearby without compromising the required minimum capacity mentioned below.	Capacity is large enough to remove passenger seats and make place for crew seating. Additionally crew can be seated in the galley or seats with additional safety requirements can be added on places were passenger seating is not possible. (e.g. at the front of the aircraft.

Capacity	Minimum capacity	The minimum capacity of 350 (between 300 & 350) seats can be reached with the proposed seating arrangement.	The current proposed design contains 438 seats. However, this will likely decrease due to the addition of galleys, lavatories and premium seating.
	Galley 'margin'	It is expected that there is enough margin in capacity for the proposed seating arrangement to remove seats and make room for additional required galleys or placement of premium seats (e.g. businessclass)	Current design has 438 seats. Decreasing pitch and adding staggered seating will improve capacity even further to 468 seats.
	Adaptability	The sections with different type of seating concepts can be adjusted in size to fulfill the varying seating needs across flights while still meeting the minimum required capacity mentioned above. (e.g. economy seats can be replaced for economy seats)	Current design does not contain any premium seats. Sections of economy sats can be removed to make room for premium seating options. This will likely slightly decrease capacity.
	Production	Development	It is expected that the amount of seating and / or interior elements that need to be developed and produced are within reasonable limits to not increase production costs drastically.
Safety & Regulations	Acquisition	It is expected that the majority of interior elements can be acquired from third parties to limit production costs.	Rebel Aero seats can be used for the staggered seating along the windows. These seats an also be used for the middle rows, or other seats without the foldable seat pan could be used for these rows.
	Seating angle	All seating during take-off and landing are within the required limit of 18 degrees from DOF.	All seats currently face the DOF.
	Emergency routes	Emergency exist are clear from seats and can be sufficiently accessed, or the proposed concept can be easily adjusted to fit the necessary safety requirements.	Walking routes (especially near emergency exits) are similar to existing aircraft layouts.

## Design Direction 2: Promote exploring

Theme	Criteria	Description	G/Y/R	Comments
Improving passenger comfort	Privacy	The floorplan concept improves passenger privacy. Privacy is improved for individual travelers as well as group travelers of different group sizes.	Yellow	Seats are not staggered enough to improve privacy. Increasing the angle will stagger the seats more prominently, improving privacy. However, capacity will decrease as a consequence.
	Legroom	Legroom is improved for all seats. Or there is sufficient variety in legroom across seats, allowing passengers to choose seats they prefer.	Yellow	Seats are not staggered enough to improve legroom. However, seats can be staggered more to increase legroom. However, capacity will decrease as a consequence.
	Sleeping	Comfort of sleeping on the plane is improved compared to regular economy seating, or passengers have sufficient options to choose seats or beds with improved sleeping comfort.	Brown	Seating is similar to conventional seating.
	Moving around	The floorplan allows passengers to stretch their legs and move around the plane. The walking route is more entertaining or engaging than in current aircrafts.	Green	A walking route is created specifically work the purpose of walking around the plane.
	Entertainment	Boredom is relieved in some other way than walking around. For example: different food service, additional forms of IFE.)	Green	Secondary seating at the front along the windows is created for people to spend time during cruising. Additional concepts can also be added

### Crew comfort & concerns

Galley access	Crew can easily enter and exit the galleys. Seats are comfortably reachable from the galleys during meal service.	Yellow	The exist of the galleys are not completely clear. Research needs to be done on whether the angle can easily be made with the catering strolleys.
Separation from passengers	Galleys and crew areas are sufficiently separated from the passengers. Preventing passengers from entering the galley or crew area during cruising, especially during meal service.	Green	Galley and walking route are entirely separated from each other, preventing people from entering the galley when walking around.
Food serving	When serving food, crew can access passenger seats from the aisle with less than 2 seat in between. (So rows of 4 seats need galleys on both sides. At maximum, a row of three seats can be accessed from one aisle.)	Green	All rows with more than 3 seats are accessible from two aisles.
Crew seating	It is expected that there is enough space for placement of additional crew seating in the galleys or nearby without compromising the required minimum capacity mentioned below.	Green	Capacity is large enough to remove passenger seats and make place for crew seating. Additionally crew can be seated in the galley or seats with additional safety requirements can be added on places were passenger seating is not possible. (e.g. at the front of the aircraft.



Capacity	Minimum capacity	The minimum capacity of 350 (between 300 & 350) seats can be reached with the proposed seating arrangement.	The current proposed design with premium seats contains 388 seats (similar to the initial flying-v floorplans). Without premium seats this is 464 seats. However, this will likely decrease due to the addition of galleys, lavatories and premium seating.
	Galley 'margin'	It is expected that there is enough margin in capacity for the proposed seating arrangement to remove seats and make room for additional required galleys or placement of premium seats (e.g. businessclass)	Current concept already contains premium seats while meeting the required limit. A margin between 38 and 88 seats remains for the addition of galleys and lavatories.
	Adaptability	The sections with different type of seating concepts can be adjusted in size to fulfill the varying seating needs across flights while still meeting the minimum required capacity mentioned above. (e.g. economy seats can be replaced for economy seats)	Size of premium area can be increase or decrease depending on specific plane needs. Additionally a premium area can be created in the other wing as well.

Production	Development	It is expected that the amount of seating and / or interior elements that need to be developed and produced are within reasonable limits to not increase production costs drastically.	The minimum amount of secondary seating that would have to be developed would be the seating at the front area: next to the windows and between the pillars.
	Acquisition	It is expected that the majority of interior elements can be acquired from third parties to limit production costs.	Rebel Aero seats can likely be used for the standard staggered seating configurations. Premium seats can also be acquired for the premium area at the rear.
Safety & Regulations	Seating angle	All seating during take-off and landing are within the required limit of 18 degrees from DOF.	All seats are within the 18 degree limit. When seats are staggered more to increase privacy this angle will also decrease.
	Emergency routes	Emergency exits are clear from seats and can be sufficiently accessed, or the proposed concept can be easily adjusted to fit the necessary safety requirements.	Walking routes are different from conventional layouts, affecting the accessibility of the emergency exits. Research has to be done and adjustments might have to be made to prove requirements are met.




### Design Direction 3: Different Functions





Theme	Criteria	Description	G/Y/R	Comments
Improving passenger comfort	Privacy	The floorplan concept improves passenger privacy. Privacy is improved for individual travelers as well as group travelers of different group sizes.	Y	Privacy is mainly improved for group travelers. In order to improve privacy for individual travelers, the staggered seat would likely have to be more staggered. The amount of different types of seats would have to be adjusted to the division of types of travelers.
	Legroom	Legroom is improved for all seats. Or there is sufficient variety in legroom across seats, allowing passengers to choose seats they prefer.	Y	Legroom is mainly improved for staggered seats, once they are staggered more. Consequentially the capacity will decrease.
	Sleeping	Comfort of sleeping on the plane is improved compared to regular economy seating, or passengers have sufficient options to choose seats or beds with improved sleeping comfort.	Y	Sleeping comfort is improved due to the addition of beds. However, this will only be occupied by a small percentage of travelers. Lounge seats and premium seats will also have improved sleeping comfort.
	Moving around	The floorplan allows passengers to stretch their legs and move around the plane. The walking route is more entertaining or engaging than in current aircrafts.	Y	The proposed concept does not improve the experience of walking around the plane remarkably. However, the unconventional layout already makes the interior more inviting to walk around than conventional aircrafts. Additional concepts can be added to improve this.
	Entertainment	Boredom is relieved in some other way than walking around. For example: different food service, additional forms of IFE.)	Y	The proposed design does not improve this remarkably. Entertaining concepts can be added to improve this.

Crew comfort & concerns

Galley access	Crew can easily enter and exit the galleys. Seats are comfortably reachable from the galleys during meal service.	Y	The exist of the galleys are not completely clear. Research needs to be done on whether the angle can easily be made with the catering strolleys.
Separation from passengers	Galleys and crew areas are sufficiently separated from the passengers. Preventing passengers from entering the galley or crew area during cruising, especially during meal service.	G	Galley and walking route are generally separated from each other. People dont walk through the galley to get to the other side of the plane.
Food serving	When serving food, crew can access passenger seats from the aisle with less than 2 seat in between. (So rows of 4 seats need galleys on both sides. At maximum, a row of three seats can be accessed from one aisle.)	G	Rows with more than 3 seats have aisles on both sides.
Crew seating	It is expected that there is enough space for placement of additional crew seating in the galleys or nearby without compromising the required minimum capacity mentioned below.	Y	Capacity is large enough to remove passenger seats and make place for crew seating. Additionally crew can be seated in the galley or seats with additional safety requirements can be added on places were passenger seating is not possible. (e.g. at the front of the aircraft.










Capacity	Minimum capacity	The minimum capacity of 350 (between 300 & 350) seats can be reached with the proposed seating arrangement.		Current design contains a total of 436 seats.
	Galley 'margin'	It is expected that there is enough margin in capacity for the proposed seating arrangement to remove seats and make room for additional required galleys or placement of premium seats (e.g. businessclass)		The current design with premium seating options contains 436 seats. However seats would likely have to be removed to make space for additional galleys. Research has to be done into where these galleys will have to be placed, because seating options and division differ from conventional layouts.
	Adaptability	The sections with different type of seating concepts can be adjusted in size to fulfill the varying seating needs across flights while still meeting the minimum required capacity mentioned above. (e.g. economy seats can be replaced for economy seats)		The current design already contains differen seating concepts. The design also allows for adapting the layout to meet specific fligh requirements by changing the division in seating types.

Production	Development	It is expected that the amount of seating and / or interior elements that need to be developed and produced are within reasonable limits to not increase production costs drastically.		The proposed concept contains many new seating concepts. Most noteworthy, the lounge seats, beds and group seats need to be developed.
	Acquisition	It is expected that the majority of interior elements can be acquired from third parties to limit production costs.		The individual staggered seats can be acquired easily. It might be possible to adapt existing seats to create group seats, but this will also require development time.
<hr/>				
Safety & Regulations	Seating angle	All seating during take-off and landing are within the required limit of 18 degrees from DOF.		All seats are within the 18 degree limit. When seats are staggered more to increase privacy this angle will also decrease.
	Emergency routes	Emergency exist are clear from seats and can be sufficiently accessed, or the proposed concept can be easily adjusted to fit the necessary safety requirements.		Walking routes are different form conventional layouts, affecting the accessiblity of the emergency exists. Research has to be done and adjustments might have to be made to prove requirements are met.

## Design Direction 4: Curved Seating

Category	Criteria	Description	G/Y/R	Comments
Improving passenger comfort	Privacy	The floorplan concept improves passenger privacy. Privacy is improved for individual travelers as well as group travelers of different group sizes.	Green	Privacy is improved for group seat and seats of two. Staggered seats could be added to improve provacy for individual travelers as well.
	Legroom	Legroom is improved for all seats. Or there is sufficient variety in legroom across seats, allowing passengers to choose seats they prefer.	Green	Legroom varies across seats. The curved seats have one seat with addition legroom. Furthermore, the seats in the middle row that border the aisle also have improved legspace.
	Sleeping	Comfort of sleeping on the plane is improved compared to regular economy seating, or passengers have sufficient options to choose seats or beds with improved sleeping comfort.	Red	Sleeping comfort is similar to conventional seating. Concepts could be created using the unused space to improve privacy.
	Moving around	The floorplan allows passengers to stretch their legs and move around the plane. The walking route is more entertaining or engaging than in current aircrafts.	Yellow	The proposed concept does not improve the experience of walking around the plane remarkably. However, the unconventional layout already makes the interior more inviting to walk around than conventional aircrafts. Additional concepts can be added to improve this.
	Entertainment	Boredom is relieved in some other way than walking around. For example: different food service, additional forms of IFE.)	Yellow	The proposed design does not improve this remarkably. Entertaining concepts can be added to improve this.
Crew comfort & concerns	Galley access	Crew can easily enter and exit the galleys. Seats are comfortably reachable from the galleys during meal service.	Green	Galley placement is similar to existing layouts, and galley exists are clear from seats.
	Separation from passengers	Galleys and crew areas are sufficiently separated from the passengers. Preventing passengers from entering the galley or crew area during cruising, especially during meal service.	Yellow	People walk through the galley to reach their seat. An improvement would be to close the galley of during cruising, but a different walking route for passengers would need to be present (which currently already is).
	Food serving	When serving food, crew can access passenger seats from the aisle with less than 2 seat in between. (So rows of 4 seats need galleys on both sides. At maximum, a row of three seats can be accessed from one aisle.)	Yellow	Most rows with more than 3 sets are accessible from aisles on both sides. With the exception of one row at the front. Additionally one of these aisles at the front end in a dead end, potentially making food service inconvenient for crew. This will likely have to be adjusted.
	Crew seating	It is expected that there is enough space for placement of additional crew seating in the galleys or nearby without compromising the required minimum capacity mentioned below.	Green	Capacity is large enough to remove passenger seats and make place for crew seating. Additionally crew can be seated in the galley or seats with additional safety requirements can be added on places were passenger seating is not possible. (e.g. at the front of the aircraft.

Capacity	Minimum capacity	The minimum capacity of 350 (between 300 & 350) seats can be reached with the proposed seating arrangement.		The proposed design contains 422 seats.
	Galley 'margin'	It is expected that there is enough margin in capacity for the proposed seating arrangement to remove seats and make room for additional required galleys or placement of premium seats (e.g. businessclass)		The current capacity already exceeds the minimum requirement. However, this proposed concept does not yet contain premium seating options. The capacity will decrease due to the addition of this.
	Adaptability	The sections with different type of seating concepts can be adjusted in size to fulfill the varying seating needs across flights while still meeting the minimum required capacity mentioned above. (e.g. economy seats can be replaced for economy seats)		Current design does not contain any premium seats. Sections of economy seats can be removed to make room for premium seating options. This will likely slightly decrease capacity.

Production	Development	It is expected that the amount of seating and / or interior elements that need to be developed and produced are within reasonable limits to not increase production costs drastically.		It is expected that conventional seats can be adjusted to be attached aircraft at a different angle than currently is done.
	Acquisition	It is expected that the majority of interior elements can be acquired from third parties to limit production costs.		Conventional aircraft seats can likely be used with adjustments to the method of attachment to the aircraft so that they can be placed at an angle.
Safety & Regulations	Seating angle	All seating during take-off and landing are within the required limit of 18 degrees from DOF.		All seats currently face the DOF.
	Emergency routes	Emergency exits are clear from seats and can be sufficiently accessed, or the proposed concept can be easily adjusted to fit the necessary safety requirements.		Walking routes (especially near emergency exits) are similar to existing aircraft layouts.



# E

## proposed floorplan assessment

Passenger capacity & distribution	The floorplan should allow for at least 300 passengers. This includes both economy and premium passengers	2.1.2	The proposed floorplan allows for an economy capacity of 307 seats. With 48 premium seats this equals a total of 355 seats.
	At least 13% of all seating should be premium class (first and business or combined)	4.1.2	The exact size of the premium area of the floorplan is not yet determined. With a economy capacity of 307 seats this area should allow for a minimum of 45 seats.
Galley & lavatory capacity & distribution	The floorplan should allow for sufficient space for the amount of galley carts and/or additional self service concepts needed defined by the number passengers on board.	4.3.1 4.3.2	The current floorplan proposal incorporates galley concepts designed by Lam (2020). When this proposed designed is used there should be sufficient space for ... ,main courses and .. Canned drinks on board. This equals ... meals and ... canned drinks per passenger.
	The floorplan should allow for at least 8 lavatories with a passenger capacity between 300 and 350. Or a minimum of 6 if other lavatory concepts such as a refreshment area are included.	4.3.3	The current floorplan proposal contains 6 lavatories and 3 refreshment rooms as designed by Yao (2019). The size of these refreshment rooms are however different from the conceptual model as proposed by Yao. In the current proposal they occupy approx. half the size of a lavatory.

When further developing the proposed floorplan and its premium seating area. It is recommended to use a minimum capacity of ... for the premium area. The size of area might be increased or decreased depending on how much space is needed.

Passenger comfort	Passenger comfort in relation to legspace and privacy should be increased compared to average economy seating. - A minimum seat pitch of 31" for standard seaing, or a pitch with similar comfort scores for staggered seating. - At least one design measure should be taken to improve privacy for individual, couple and group travellers.	4.2	Staggered seating in the proposed floorplan has a pitch of 29", which equals a comfort score of 6.7 (Liu.. 2021). Minimally staggered seats have a pitch of .32", this also equals a comfort score of 6.7 (Liu.. 2021).
Seating configurations	Passenger seats that are used during take-off and landing should not be angled more than 18° from DOF.  There should be no less than 2 passenger seats in-between a passenger seat and an aisle.	2.1.2	All staggered seats are facing the DOF (0° from DOF), and all mimumally staggered seats are angled at the maximum of 18° from DOF.  All rows that border only one aisle are 3 seats wide, and all rows that border two aisles are at maximum 4 seats wide.
Crew comfort & concerns	Galley areas should not be placed along the main walking route for passengers	3.2.1.2 3.3.3	In the current proposal, galley areas are not placed along the main walking route.
	There should be a minimum of 8 crew seats included in the floorplan	2.1.2	The current floorplan does not yet contain suggestions for the placement of crew seatings. It is however expected that there is sufficient room at for example the rear galley, or near the main doors, for placement thereof.
Aisle width	There should be a dedicated resting area for crew in the main cabin or front of cargo area	2.1.2	It is recommended to place the resting area for crew members in the cargo area, similar to the initial floorplan proposals as described in chapter 2.1: previous floorplan designs
	The main walking route should have minimum aisle width of 1m.  Aisle width should not be smaller than 381mm below 640mm height, and 508mm above 640mm height.	4.4.1  2.4.2.3	When the recommendations as described under chapter 6: Adjustments to placement of galley and lavatories, are carried through. The galley area at the front of the aircraft will border the main walking route. It is therefore recommended to place the entrance to this galley area not directly along the walking path.
Emergency exits & routes	Emergency exists should be directly accessible from the neighbouring aisle, without seats or other interior elements obstructing the path.		

**F**

**design brief  
project description**





introduction (continued): space for images

image / figure 1: \_\_\_\_\_

image / figure 2: \_\_\_\_\_

**PROBLEM DEFINITION \*\***

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

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**ASSIGNMENT \*\***

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... . In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

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**PLANNING AND APPROACH \*\***

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date \_\_\_\_\_ - \_\_\_\_\_ end date \_\_\_\_\_



### MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... . Stick to no more than five ambitions.

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### FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

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