Flying V: A Disruptive Airplane Configuration

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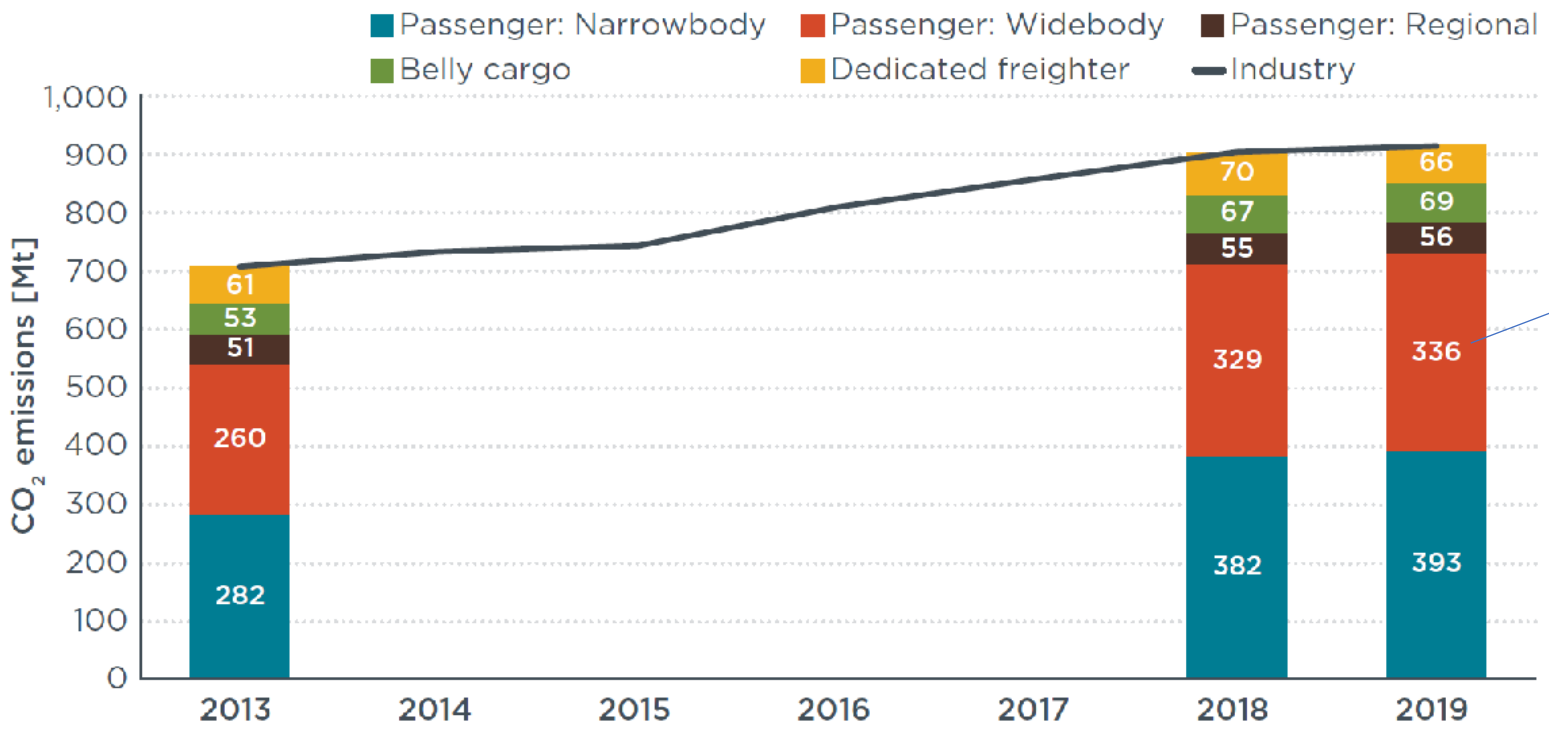
The rest is history…

The Problem: Aviation's Contribution to Global Warming



43% of emissions from wide-body aircraft

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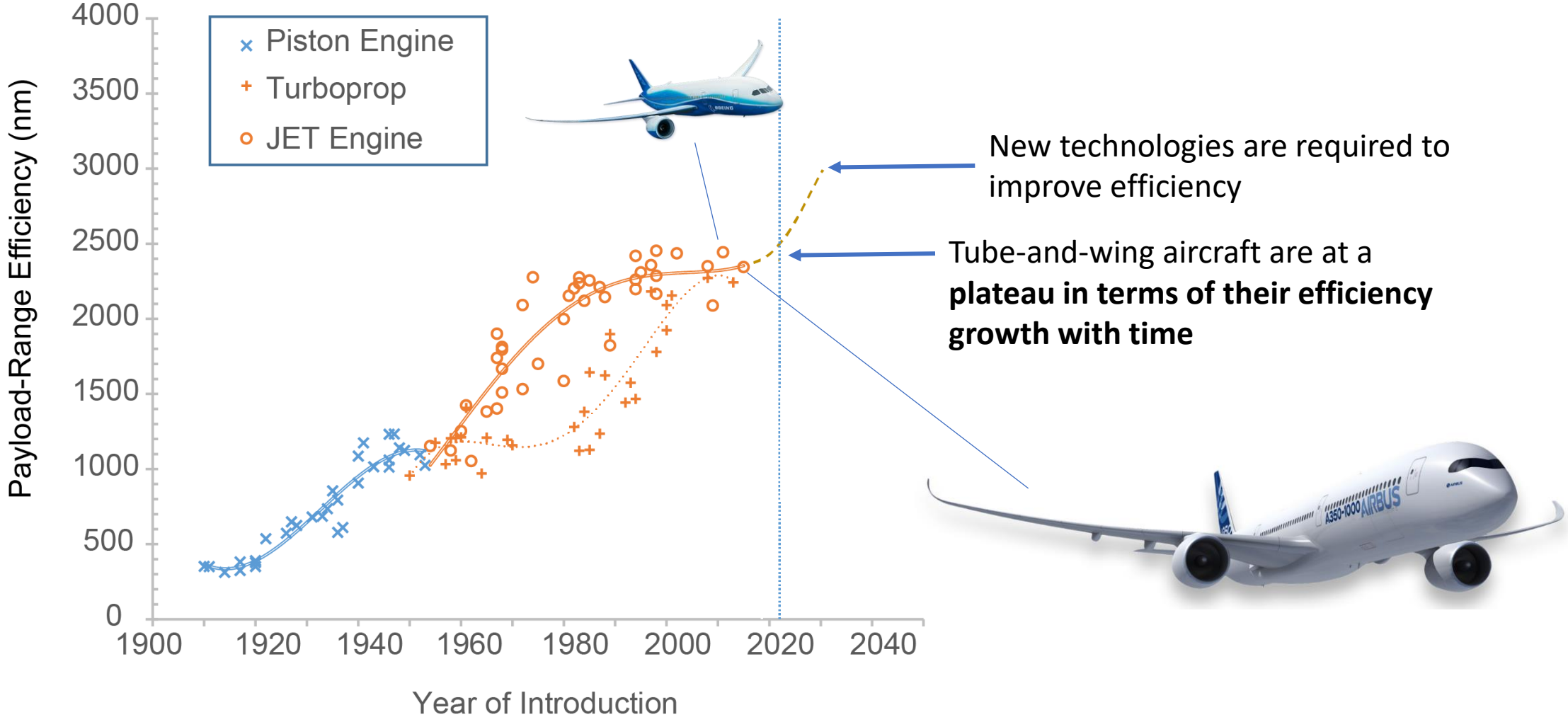
The Problem: Tube-and-Wing Aircraft Fully Mature



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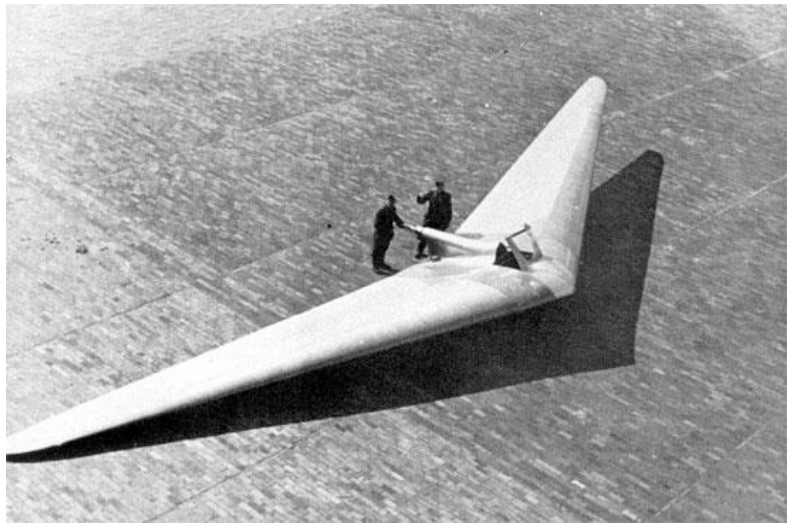
Mo, L., "Conceptual Design Study for In-flight Refueling of Passenger Aircraft", PhD thesis, TU Delft, 2017

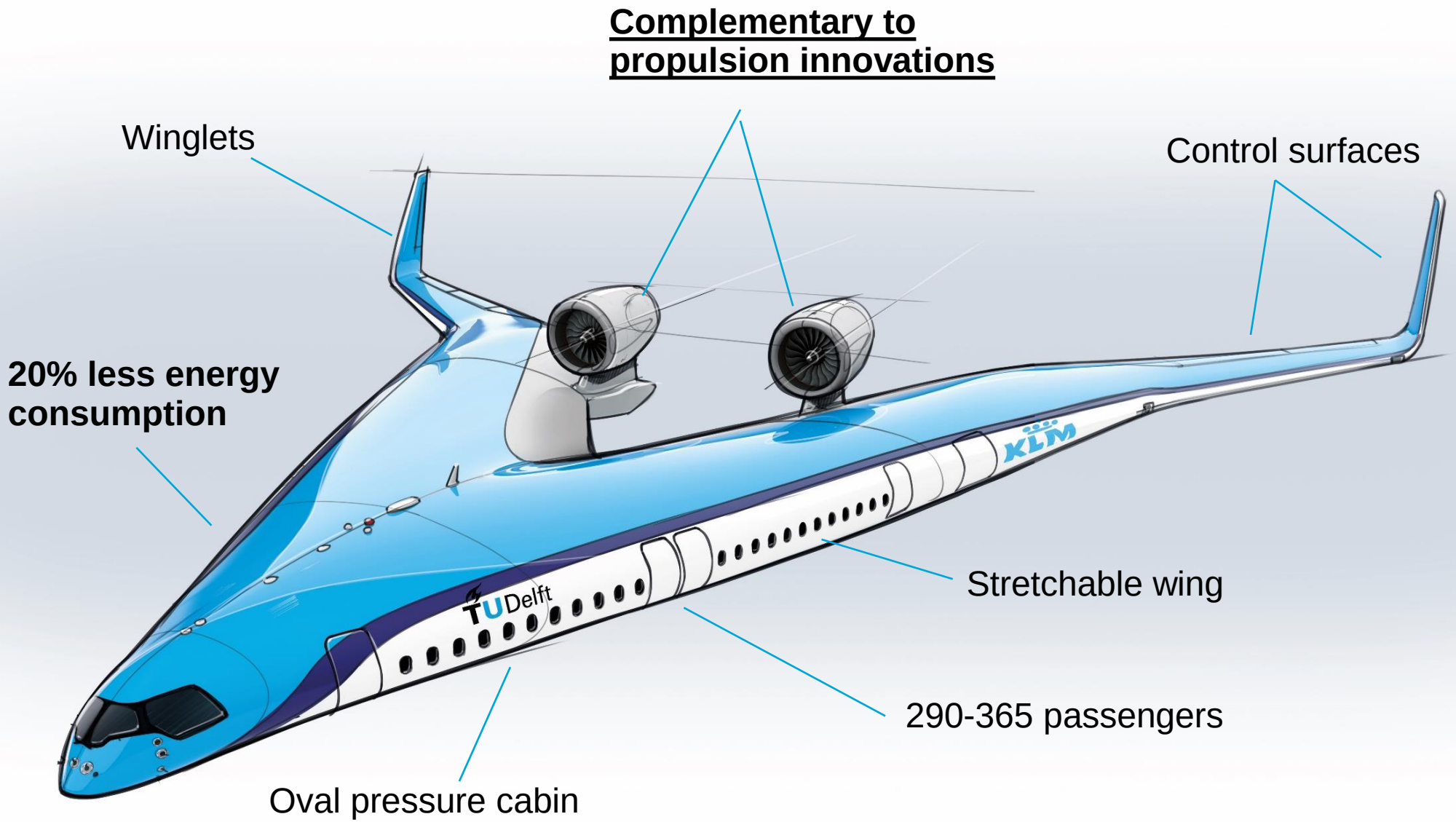
What about Flying Wings?



Boeing/NASA Blended-Wing Body

Introducing the Flying V

Flying V Overview



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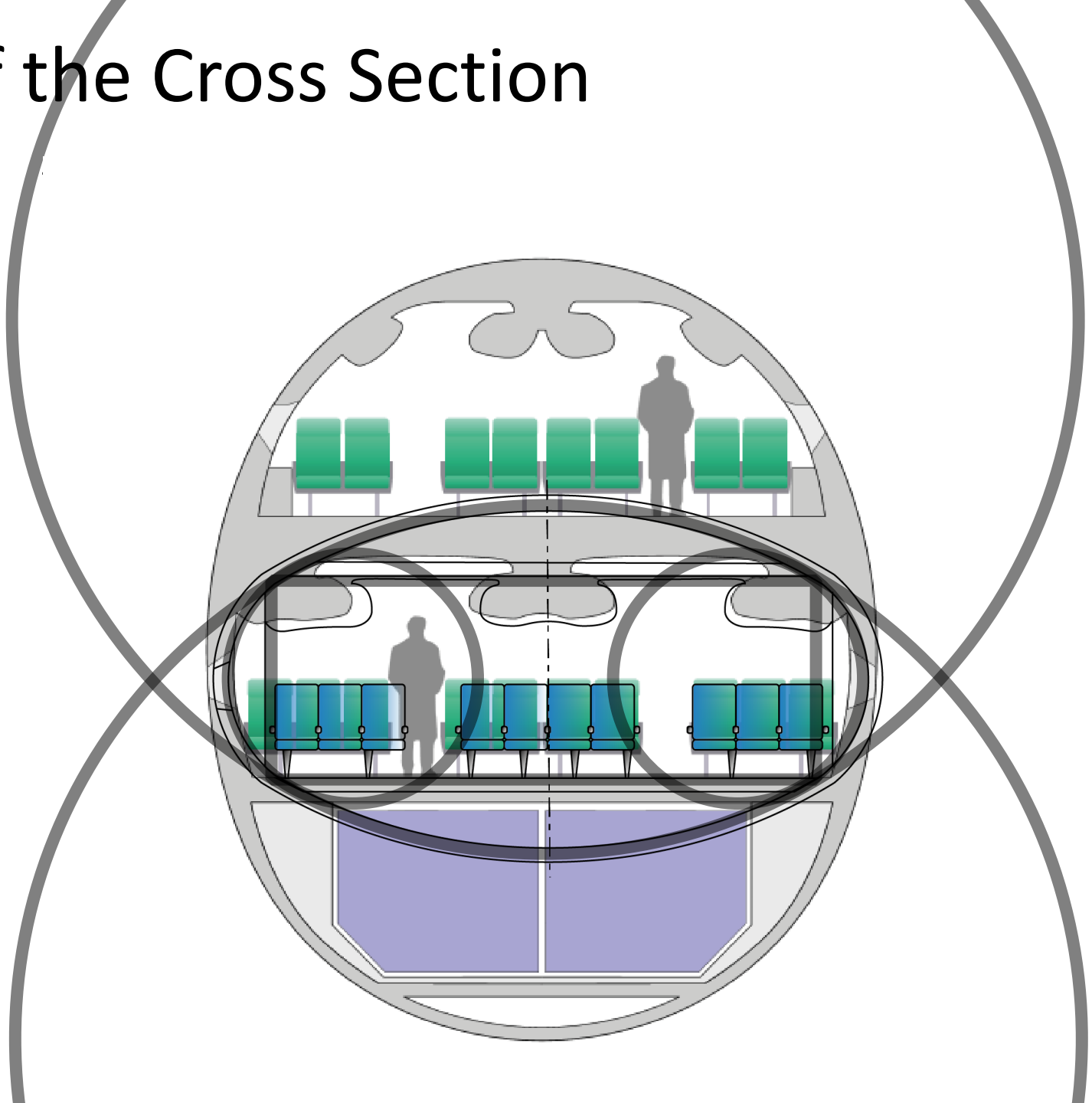
Design of the Cross Section



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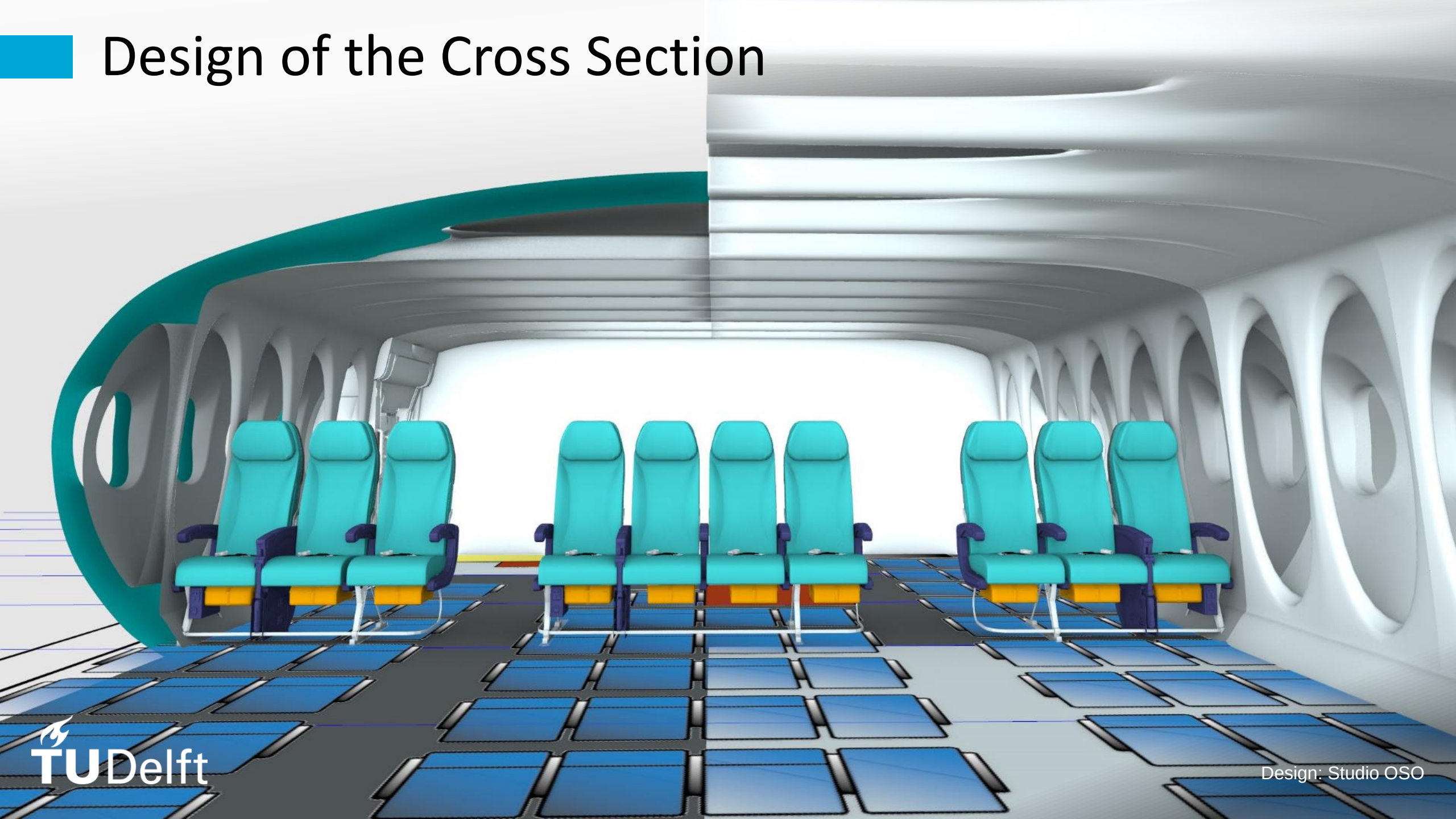
Design of the Cross Section



Design: Studio OSO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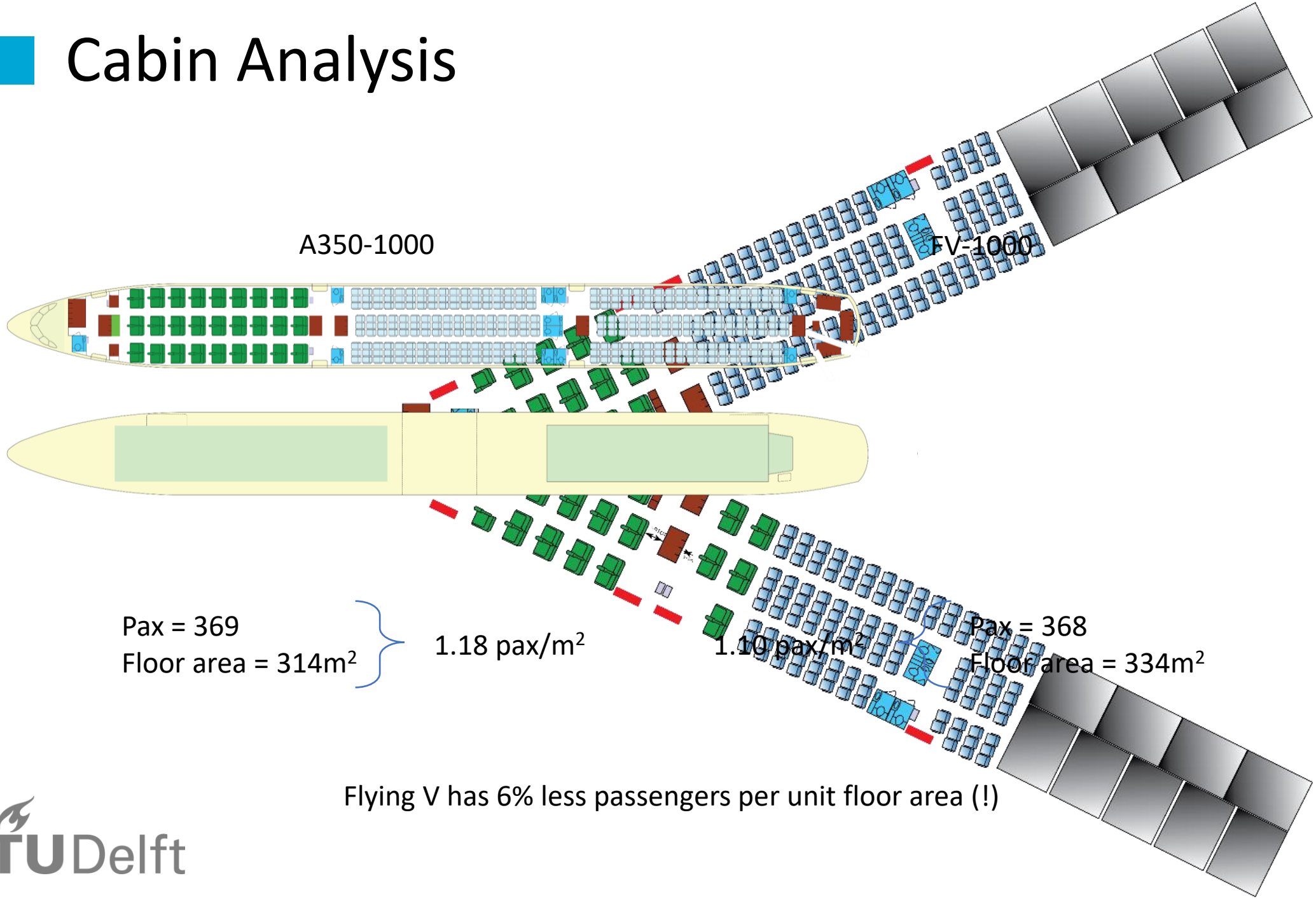
KLM

Cabin Analysis



Flying V has 6% less passengers per unit floor area (!)

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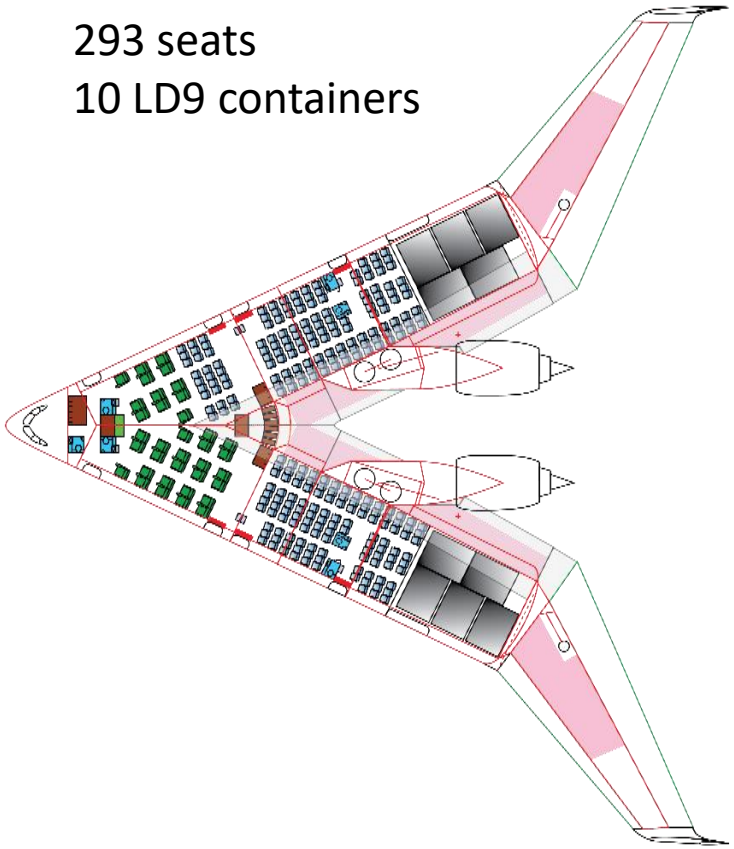
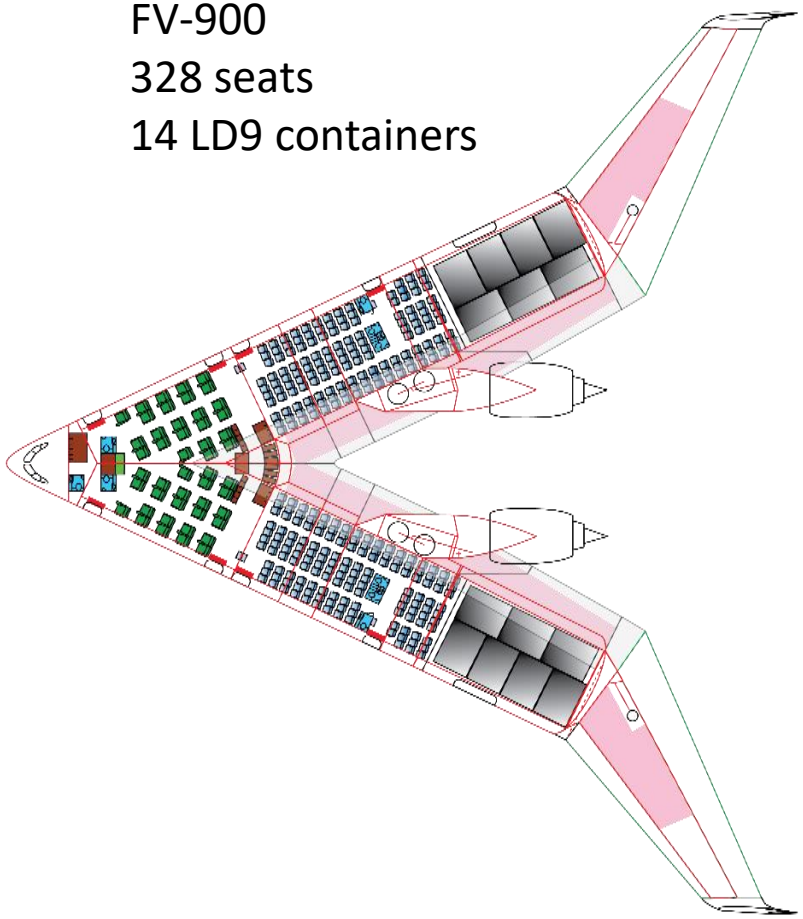
Family Concept

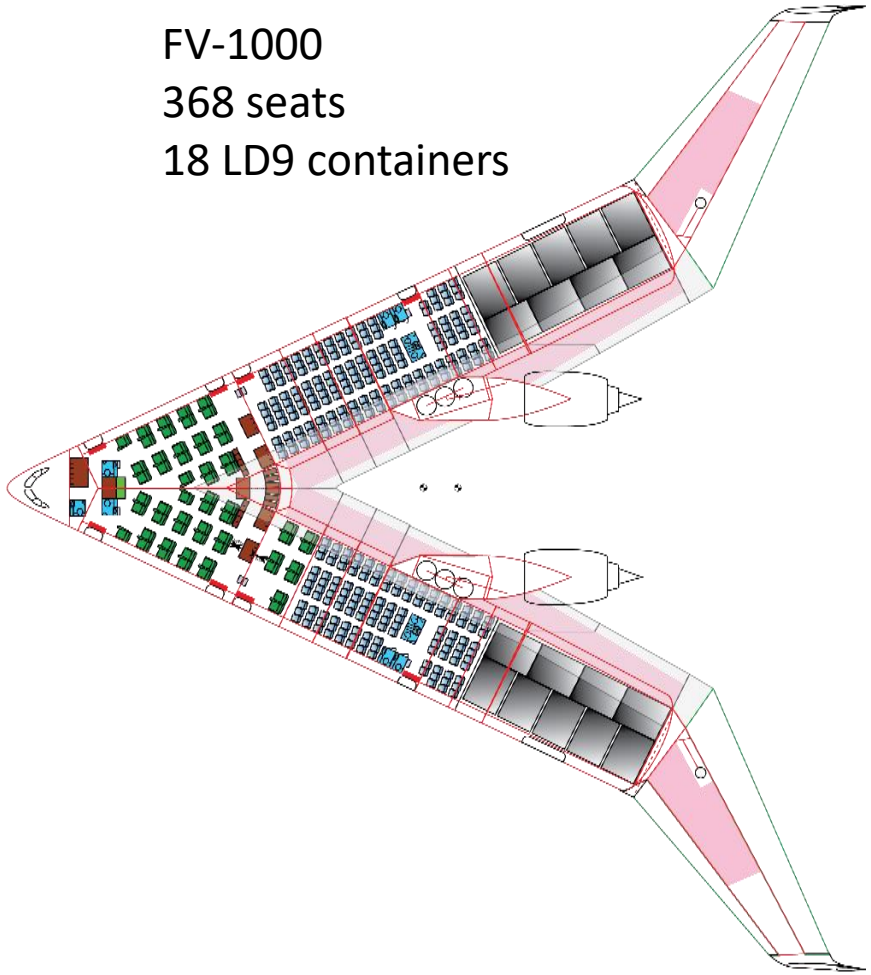
FV-800
293 seats
10 LD9 containers



FV-900
328 seats
14 LD9 containers



FV-1000
368 seats
18 LD9 containers



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Payload-Range Efficiency

Flying-V-1000

2990 nm

+2% due to 750km reduction in harmonic range

2940 nm

+6% due to 8% decrease in structural weight

20% PRE increase

2790 nm

+10% due to 6% increase in effective span

A350-1000

2540 nm

2510 nm

+3% due to 5% reduction in wetted area

-1% due to reduced design payload weight

2490 nm

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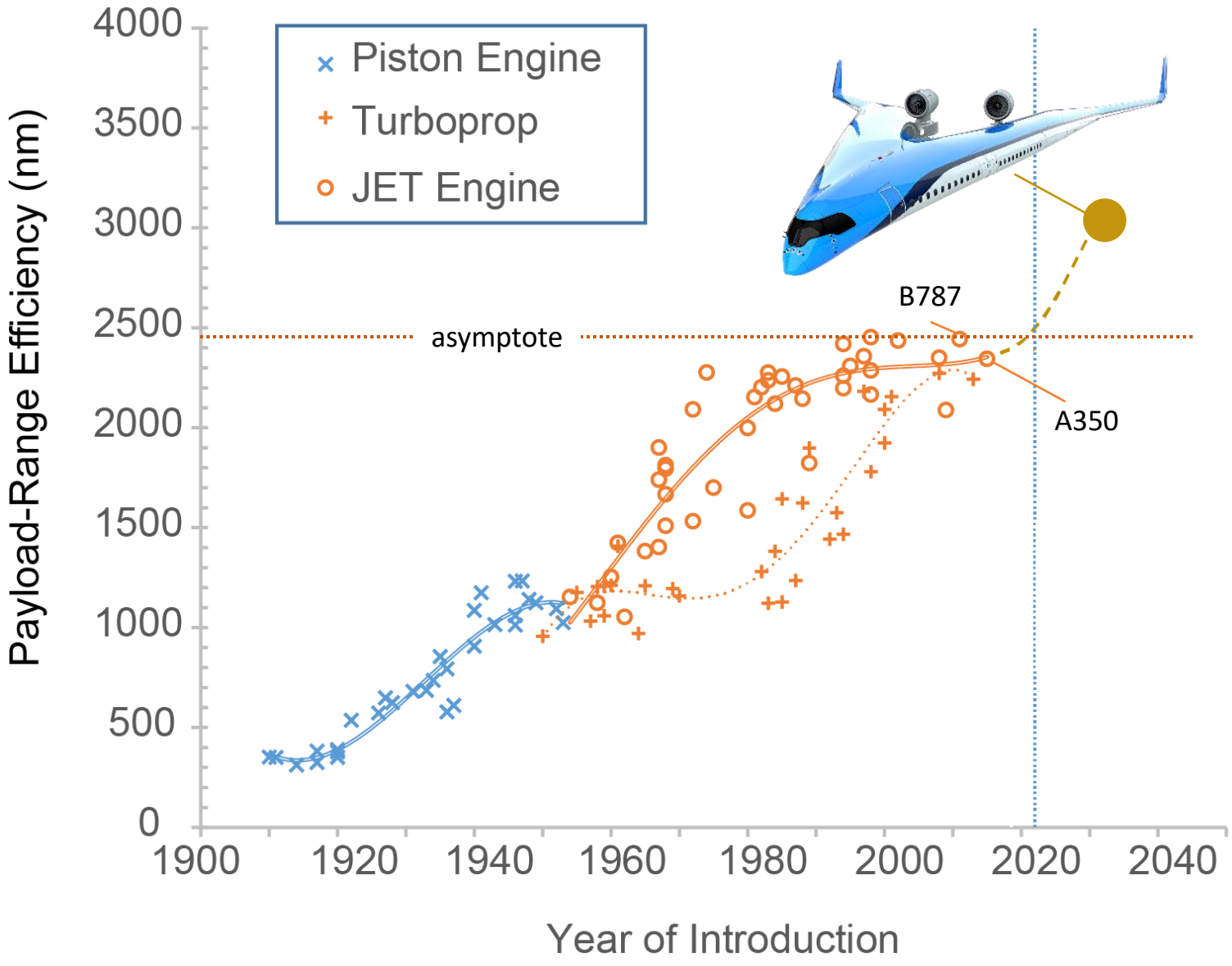

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Can it Fly?

Yes it Can!

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Pioneering Spirit back to Europe!

Flying V versus Tube-and-Wing:

- ✓ Lower structural weight
- ✓ Higher aerodynamic efficiency
- ✓ No flaps
- ✓ Simple family concept
- ✓ Adequate handling qualities

Flying V has the potential to disrupt aviation industry

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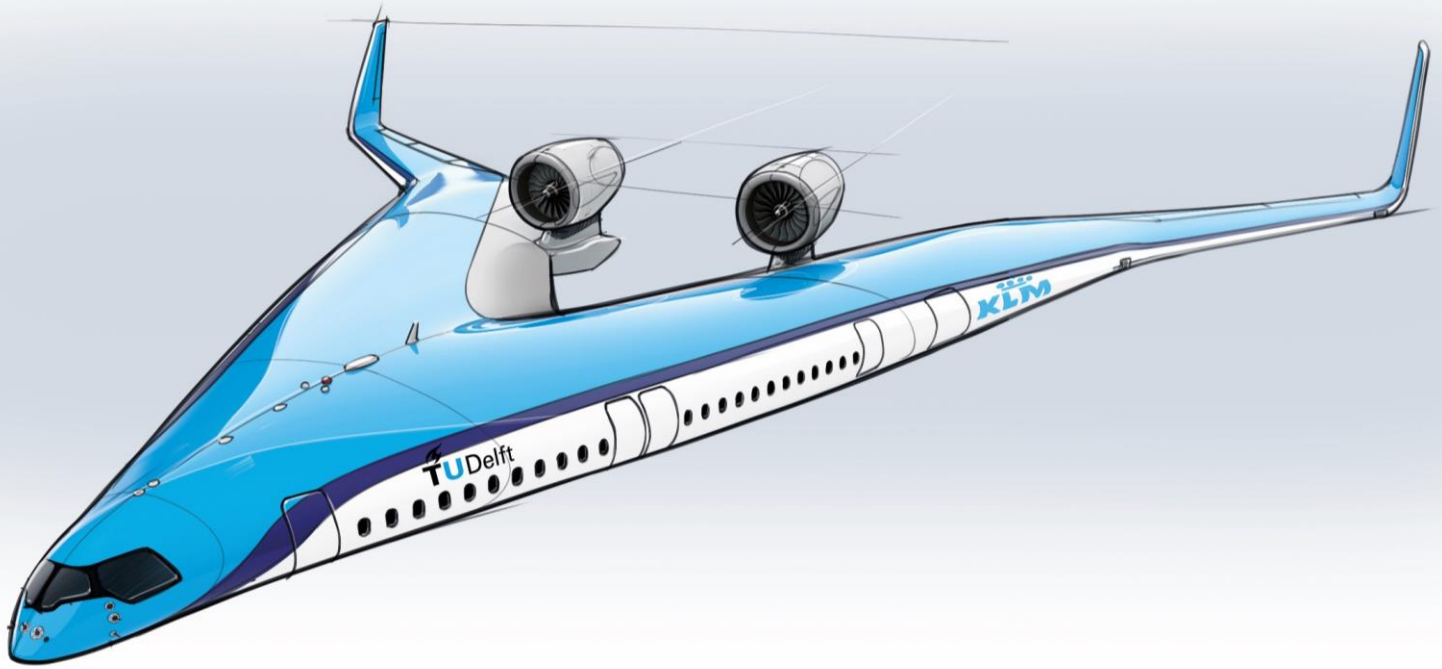

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