



Dedicated to innovation in aerospace

FTL2 Participant Briefing

Review of the effectiveness of the EU Flight Time Limitation (FTL) regulations for aircrew

Widerøe data collection campaign | June 2024





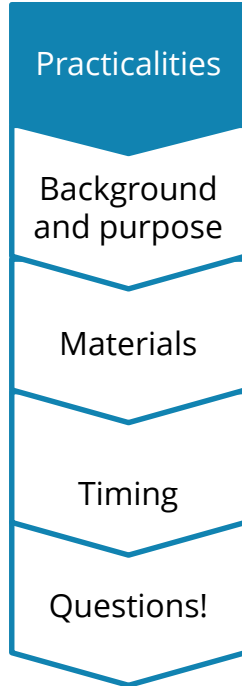
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Before you start with this presentation...

- Please make sure to collect the **case with your assigned case number** from at the Widerøe Base Manager Office at Tromsø or Bodø airport
- Next, please follow the instructions through the online video, using the QR code which links to this video on our website.
- If anything is unclear after watching the instruction video and this presentation, please:
 - consult the information booklet in your case (or on ftl2.nlr.nl)
 - contact the researchers via email: ftl2@nlr.nl
 - It is possible for us to set up a dedicated Teams meeting with you, to explain the usage of the data collection materials and answer your questions directly.

Contents of this briefing



Informed consent & data policy

- ✓ Participation is completely voluntary
- ✓ Data collection through the materials provided to you
- ✓ Total of **14 consecutive days**; max 15 minutes per day
- ✓ Handling of the data complies with EU General Data Protection Regulation (GDPR), meaning that:
 - ✓ Data will remain confidential and be processed anonymously
 - ✓ No individual data will be shared with your organization
 - ✓ Personal data (such as email) will be deleted upon return of equipment
 - ✓ Data will be stored securely and analysed at a company level only





Background and purpose



The FTL Research Study

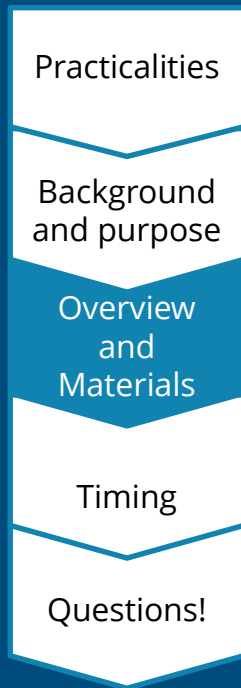
EASA has set up a research study to perform **a review of the effectiveness of the flight and duty time limitations and rest requirements.**

This Flight Time Limitations (FTL2.0) review study is being performed by a consortium of the Royal Netherlands Aerospace Centre (NLR), Stockholm University, German Aerospace Centre (DLR), the Finnish Institute of Occupational Health (FIOH), and Jeppesen.

The objective is **to collect aircrew data on fatigue, alertness, workload and sleep** to determine whether the FTL rules provide sufficient protection to aircrew fatigue. If necessary, the consortium will draft recommendations for changes to the rules.

At Widerøe, we are specifically interested in the effect of:

- Duties which multiple sectors (≥ 6)
- Standby duties
- Controlled Rest



Materials for data collection

Overview of data collection

- ✓ Materials
- ✓ Duration: 14 consecutive days
- ✓ Tasks:
 - ✓ Fill out questionnaire (maximum of 15 minutes per day)
 - ✓ Wear ActiWatch

Don't give in if you miss out on a view data points – the data is still very useful and each day of data collection raises **money for charity!**

Materials

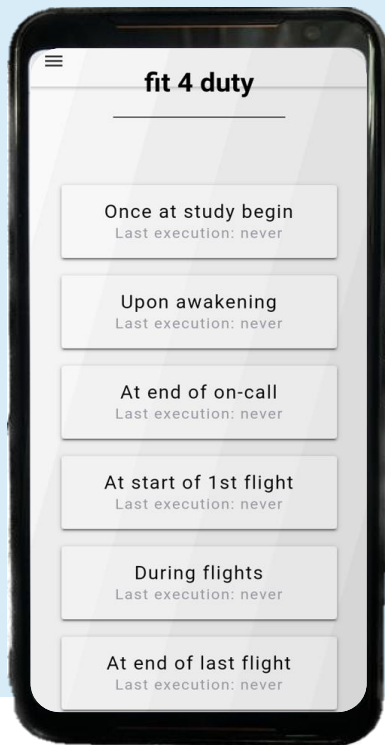


The case

- ✓ Make sure it has the number communicated to you on the tag
- ✓ Keep all materials in the case when you are not using them
- ✓ Make sure the zippers are properly closed so the materials will not fall out
- ✓ The information booklet and quick reference card are provided in the case



The phone (with charger)

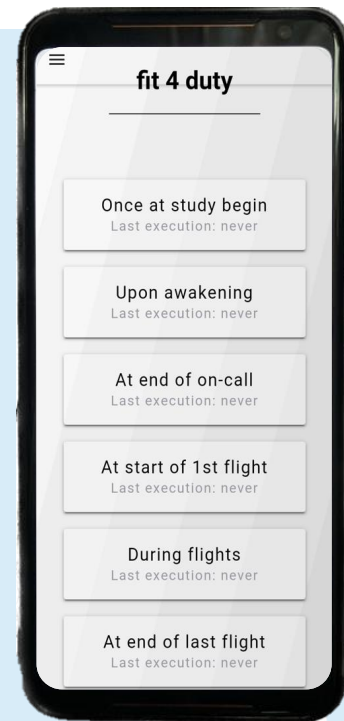


- ✓ The icon of the Fit4Duty app is on the home screen
- ✓ Make sure you have enough battery during the data collection (**never < 20%**)
- ✓ The charger is included in the case
- ✓ **Always** put on airplane mode while in flight
- ✓ Please do not change settings or use the phone for anything other than the study
- ✓ Please check connectivity from time to time

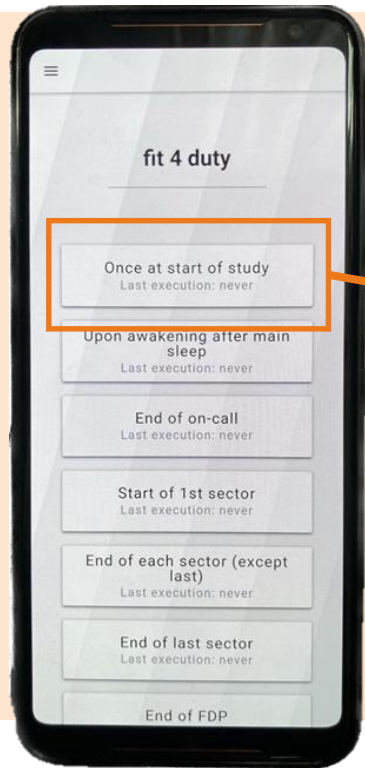
The phone (with charger)

With the phone, we measure:

- ✓ Sleep data
 - ✓ Time of going to bed
 - ✓ Time getting out of bed
 - ✓ Timing/length of naps
- ✓ Subjective fatigue and sleepiness ratings
 - ✓ KSS: sleepiness
 - ✓ SP: fatigue
- ✓ Objective alertness
 - ✓ PVT: 3 min reaction time task
- ✓ Flight information
 - ✓ Start/End
 - ✓ Destination
 - ✓ Etc.
- ✓ In flight rest periods
- ✓ Workload, hassles etc



Important notes about the app



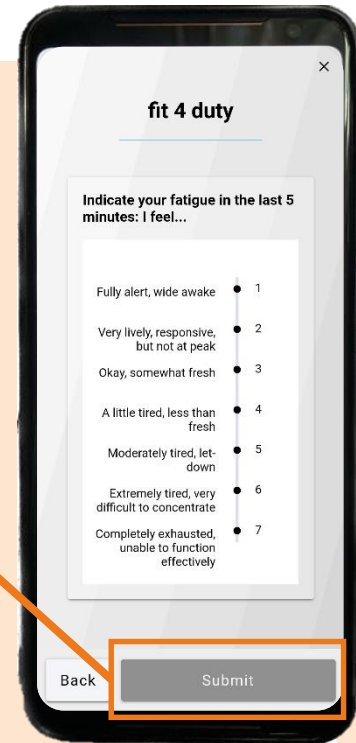
The app could say
“last execution: never”

Please ignore this message
Your responses have been recorded!

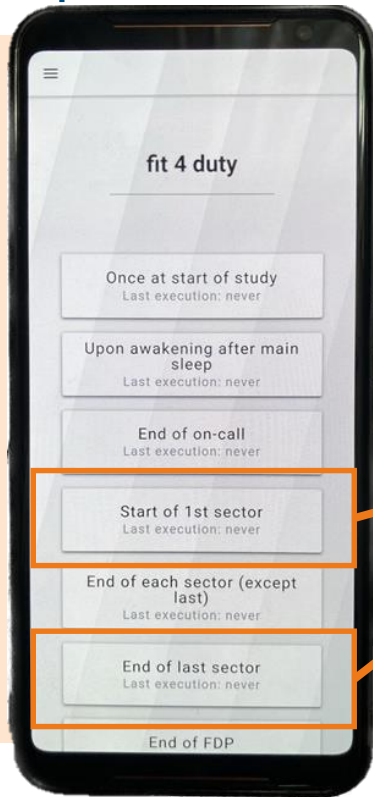
Important notes about the app

Always make sure to click on “Submit”
after completing the questionnaires

This will save your input

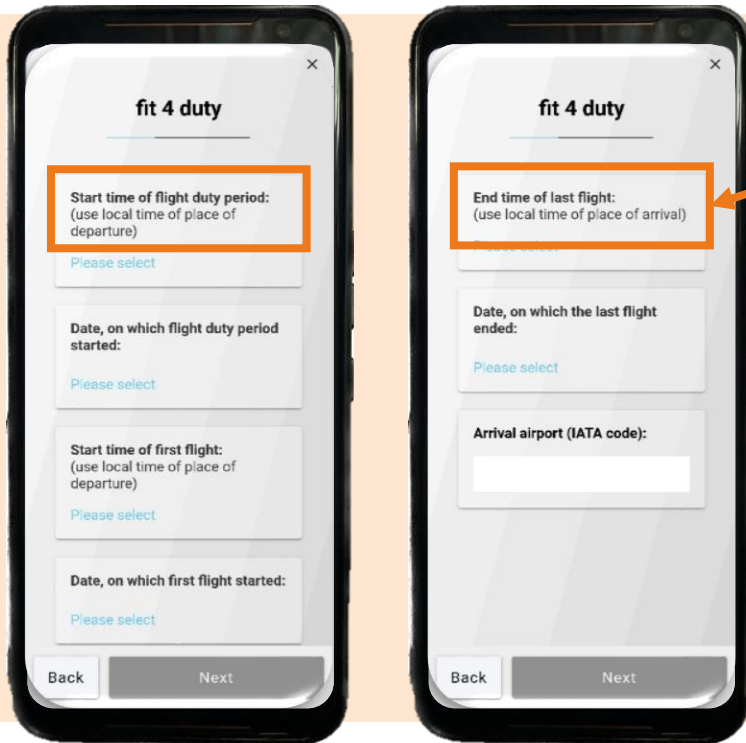


Important notes about the app



Always make sure to complete the “*Start of 1st sector*” and “*End of last sector*” flight log questions. Otherwise, we cannot determine, e.g., the length of the flight duty period.

The correct time zone is written in the question title



fit 4 duty

Start time of flight duty period:
(use local time of place of departure)

Please select

Date, on which flight duty period started:

Please select

Start time of first flight:
(use local time of place of departure)

Please select

Date, on which first flight started:

Please select

Back Next

fit 4 duty

End time of last flight:
(use local time of place of arrival)

Please select

Date, on which the last flight ended:

Please select

Arrival airport (IATA code):

Back Next

- ✓ Make sure you use the correct time zone, as this information is essential for us to determine the duration of your flights and of your layovers

The Actiwatch

- ✓ You will receive one of these two versions; they look different but work the same.
- ✓ The watches have been prepared and charged, you don't have to charge them yourself.
- ✓ Press the **left** button on the side **firmly** for 2 seconds before going to sleep or taking a nap
- ✓ It stores data on an internal chip; it does **not transmit** any data to the cloud
- ✓ The Actiwatch is water resistant but... please take it off when showering or going for a swim



The Actiwatch

With the ActiWatch, we objectively measure:

- ✓ Time of falling asleep
- ✓ Time of waking up
- ✓ Start and end times of naps
- ✓ Light exposure

This data is complementary to the data gathered on the Fit4Duty app.



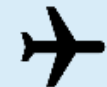











Timing

Fit4Duty app

During each of the 14 days you will be asked to

	<p>After waking up</p>	<ul style="list-style-type: none"> • Fill in the sleep/wake log on the app • Rate your level of sleepiness and fatigue on two rating scales (KSS & SP) 	
	<p>During flight duty</p>	<ul style="list-style-type: none"> • Rate the KSS & SP before and between sectors • Perform the reaction time task (PVT) before your duty 	
	<p>When planning a nap / rest</p>	<ul style="list-style-type: none"> • Press the button on the Actiwatch, indicating a sleep period • Fill in the sleep/wake log, after taking a rest / nap 	
	<p>After flight duty</p>	<ul style="list-style-type: none"> • Fill in your achieved flight duty details of that day • Perform the reaction time task (PVT) 	
	<p>When going to sleep</p>	<ul style="list-style-type: none"> • Fill in the sleep/wake log • Press the button on the Actiwatch 	

During each of the 14 days you will be asked to



After waking up

- Fill in the sleep/wake log on the app
- Rate your stress, business and fatigue on two scales (SS & SP)



During flight duty

- Report your status **between sectors**
- Report your **task (PVT) before**



When planning a nap / rest

- Report your status **before** taking a rest, indicating the **start** and **end** of the rest



After flight duty

- Fill in the **task details** of the **task (PVT)**
- Perform **task (PVT)**



When going to sleep

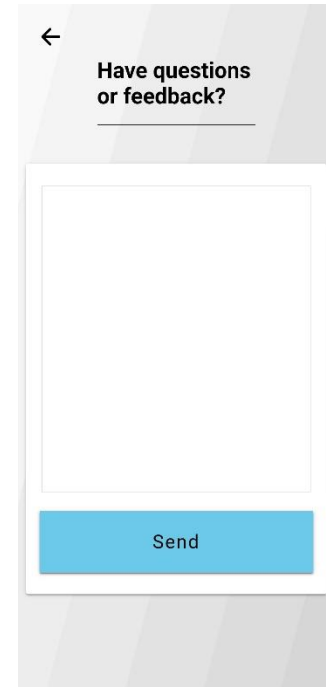
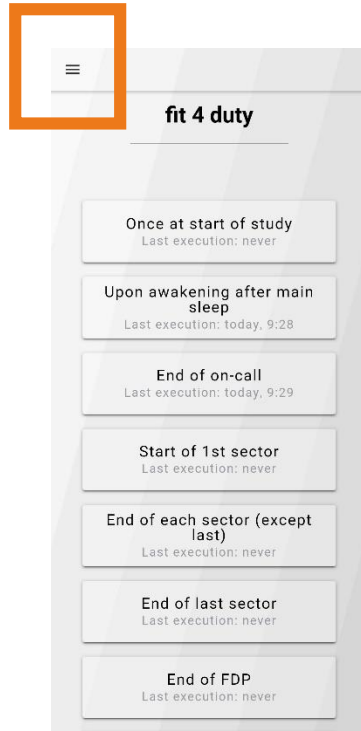
- Fill in the sleep/wake log
- Press the button on the Actiwatch



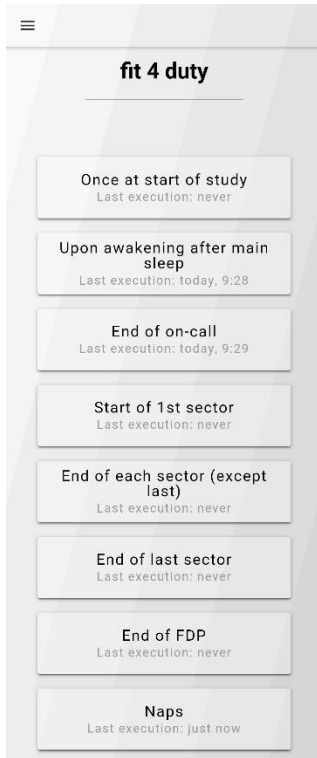
Also on days off please!

Don't forget to log standby

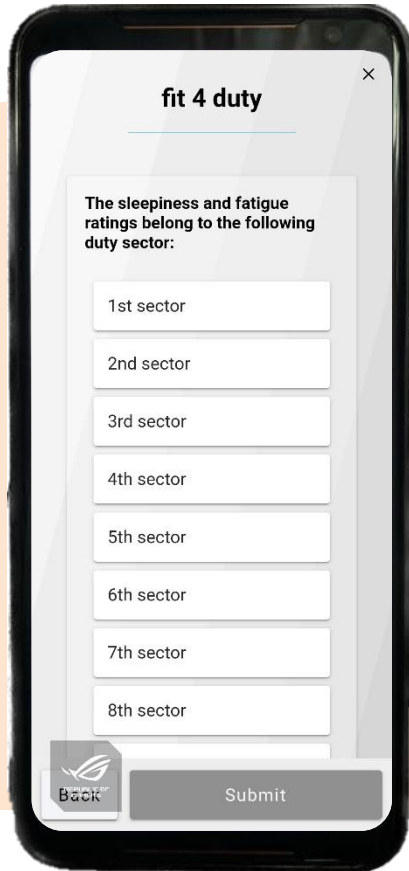
Navigating the app – reach out if you have any questions



Complete the tasks at the right time



Task	Ideal time	Alternative time
Once at start of study	When receiving the materials	-
Upon awakening after main sleep	Straight after waking up	-
End of on-call	Straight after ending your on-call duty (end time or just after duty call)	-
Start of 1 st sector	At the start of your first sector, already having started FDP	Upon arrival at the airport
End of each sector (except last)	After completing duties after landing; before start next sector	-
End of last sector	After completing landing duties after the last flight of your duty period	-
End of FDP	Straight after ending your FDP	Just before departure to home (or hotel)
Naps	At the end of the day, logging all the sleeps for that day	At the end of the day or after each sleep



fit 4 duty

The sleepiness and fatigue ratings belong to the following duty sector:

- 1st sector
- 2nd sector
- 3rd sector
- 4th sector
- 5th sector
- 6th sector
- 7th sector
- 8th sector

Back Submit

Important note!

It is fine to **complete the ratings between sectors later** when you have a larger break, if you do not have time in between the sectors themselves.

In that case, make sure you register your fatigue and sleepiness for the correct sector!

Examples of questions and question types

The image displays five sequential screenshots of a questionnaire titled "fit 4 duty".

- Screenshot 1:** Contains four multiple-choice questions:
 - "When did you go to bed? (local time)" with a "Please select" button.
 - "When were you ready to fall asleep? (Lights off) (local time)" with a "Please select" button.
 - "How long did it take you to fall asleep (in minutes)?" with a text input field.
 - "When did you wake up? (local time)" with a "Please select" button.
- Screenshot 2:** "Indicate your sleepiness in the last 5 minutes: I feel..." with a vertical Likert scale from 1 (Extremely alert) to 9 (Very sleepy, great effort to keep awake).
- Screenshot 3:** "Indicate your fatigue in the last 5 minutes: I feel..." with a vertical Likert scale from 1 (Fully alert, wide awake) to 7 (Completely exhausted, unable to function effectively).
- Screenshot 4:** "Temporal demand" (How hurried or rushed was the pace of the task?) and "Performance" (How successful were you in accomplishing what you were asked to do?) with horizontal Likert scales from "Very low" to "Very high" and "Perfect" to "Failure" respectively.
- Screenshot 5:** "Select all hassles that occurred during the flight duty period:" with a checklist of 10 items:
 - No break
 - Bad weather
 - Demanding airport
 - High density airspace
 - Sloggy ground handling
 - Tight crew rotation
 - Technical defect
 - Abnormal procedures
 - Duty change on short notice
 - Hotel (noise/low quality)

If you cannot complete a task or miss a data collection moment, please **do not give in!** All data you enter will still be valuable, regardless of whether you missed a task.

Examples of questions and question types

The screenshots show various question types:

- Time-based questions:** "When did you go to bed? (local time)", "When were you ready to fall asleep? (Lights off) (local time)", "How long did it take you to fall asleep (in minutes)?", "When did you wake up? (local time)".
- Alertness scale:** "Indicate your sleepiness in the last 5 minutes: I feel..." with options: Extremely alert, Very alert, Alert, Rather alert, Neither alert nor sleepy, Some signs of sleepiness, Sleepy, but no effort to keep awake, Sleepy, some effort to keep awake, Very sleepy, great effort to keep awake.
- Temporal demand:** "How hurried or rushed was the pace of the task?" with a scale from Very low to Very high.
- Performance:** "How successful were you in accomplishing what you were asked to do?" with a scale from Perfect to Failure.
- Hassles checklist:** "Select all hassles that occurred during the flight duty period:" with options like No break, Bad weather, Demanding airport, High density airspace, Sloggy ground handling, Tight crew rotation, Technical defect, Abnormal procedures, Duty change on short notice, Hotel (noise/low quality).

If you cannot complete a task or miss a data collection moment, please **do not give in!** All data you enter will still be valuable, regardless of whether you missed a task.


Reaction time test (3-minute PVT)

Reaction Time Test

Please go to a quiet place with minimum disturbances!

Please respond as fast as possible by using the thumb of your dominant hand to press the response field as soon as the stimulus appears on the screen. If you press too early, this will count as error!

Please press here to start.



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If you cannot complete a task or miss a data collection moment, please **do not give in!** All data you enter will still be valuable, regardless of whether you missed a task.

Reaction time test (3-minute PVT)

Reaction Time Test

Please go to a quiet place with a minimum disturbance.

Please respond as fast as possible using the thumb of your right hand to press the response button as soon as the stimulus appears on the screen. If you press too early, this will count as an error!

Please practice the PVT three times under "Once at start of study"

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If you cannot complete a task or miss a data collection moment, please **do not give in!** All data you enter will still be valuable, regardless of whether you missed a task.

During and after the 14 days of data collection

Airline	Briefing / Pick up / practice	First possible full day of data collection	Last day of data collection	Hand in devices on	Return devices BEFORE
Briefing day	3 June	4 June	18 June	19 June	30 June!
	4 June	5 June	19 June	20 June	
	5 June	6 June	20 June	21 June	
Pick-up day	6 June	7 June	21 June	22 June	
	7 June	8 June	22 June	23 June	
	8 June	9 June	23 June	24 June	
	9 June	10 June	24 June	25 June	

*Please return all devices to the Base Manager Office at Tromsø/Bodø airport **before June 30th***

Your participation will raise money for charity



- ✓ Charity to arrange experiences for children with cancer
- ✓ By employees of Widerøe
- ✓ Founded in 2008
- ✓ **€1 for each day of participation**



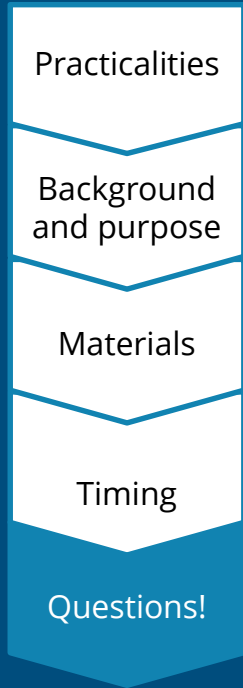
FAQs

- What do I do when I forgot to log a sleep period/nap?
 - How does the Actiwatch work? Which button do I press when I go to sleep?
 - What if I am sick and do not go to work? Or if I have any other non-flying duty?
 - What happens if I do not answer the questions at the preferred time?
- ✓ **More FAQs and answers are on the ftl2.nlr.nl website**

Need some assistance?

- Contact info: ftl2@nlr.nl
- Instruction videos & FAQs: <https://ftl2.nlr.nl>
- NLR consultants
 - Alwin van Drongelen
 - Laurie Marsman
 - Anneloes Maj
 - Carmen van Klaren





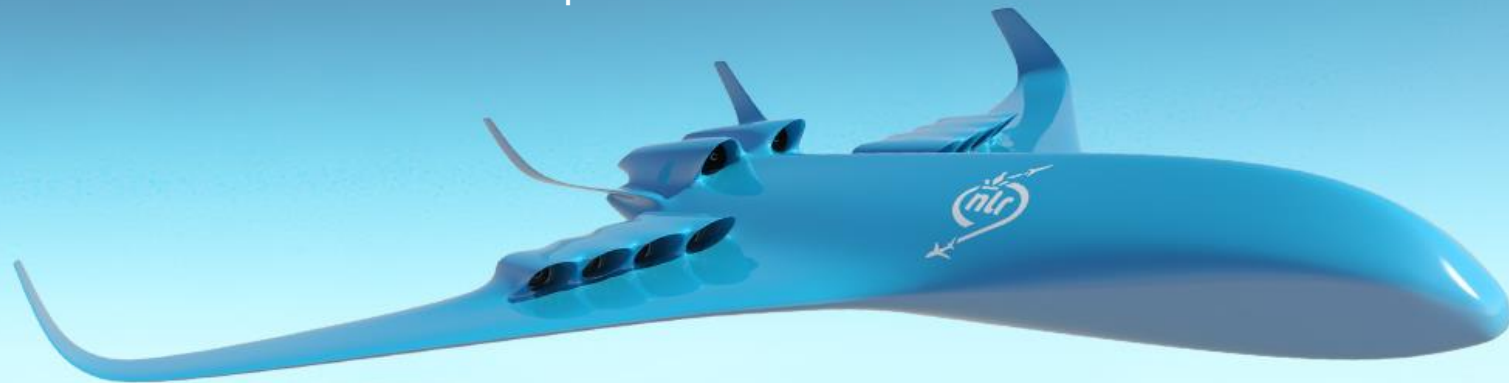
Any questions? Please contact us.
Thanks a lot for your help in this important study!



Dedicated to innovation in aerospace

Fully engaged

NLR - Netherlands Aerospace Centre



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