

# CTran – App-based evaluation of new mobility alternatives in public transport in lignite mining areas

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Institut für  
Verkehrsforschung

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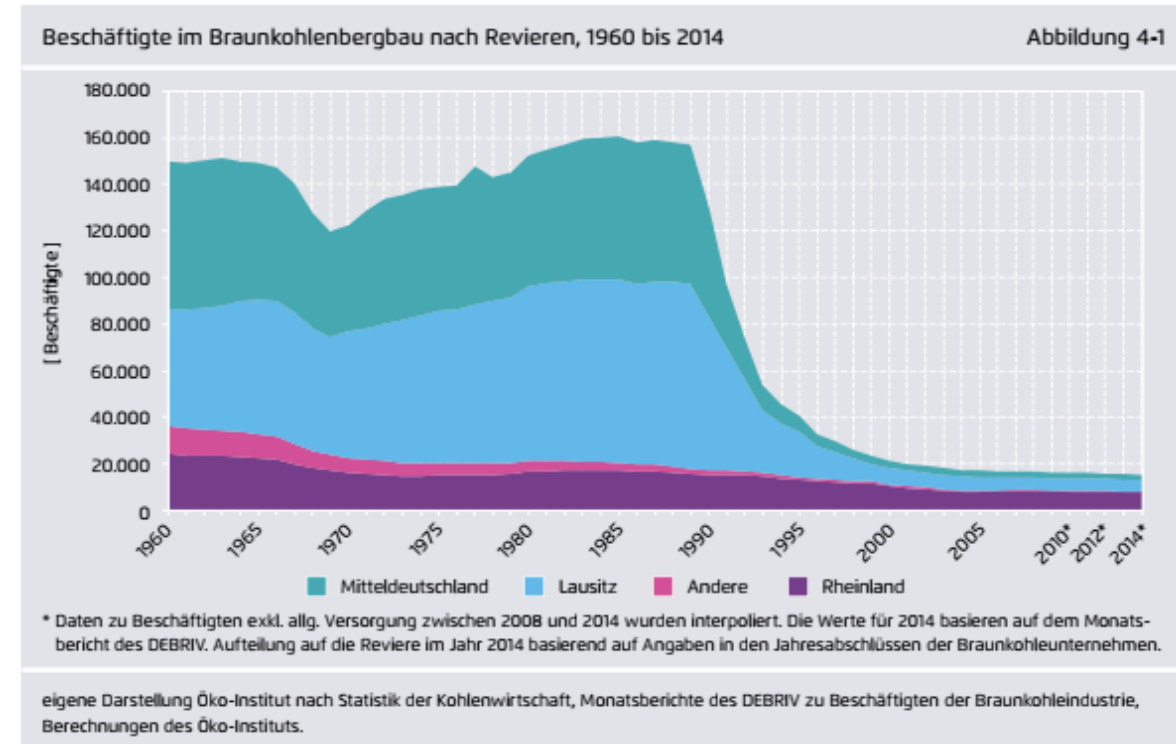
aufgrund eines Beschlusses  
des Deutschen Bundestages



# Problem: Structural change in lignite mining areas and car-based mobility in rural areas

- On-going change of structures:
  - 1. structural break in 1989: 80T workers → 2000: 7T
  - Economy and jobs
  - Population and mobility
  - Low density of shops etc., disperse settlement pattern
- Example Lausitz:
  - Decrease of population of about 1/5 since 1990, in Landkreis Spree-Neiße of over 25 %
  - Average age was 49,9 in 2019 which was much higher than the German average (45,7)
  - Share of persons under 18 decreased from 24 to 15 %, while the one of 65+ increased from 14 to 28 %

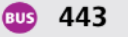
[Quelle: BBSR-Analysen KOMPAKT 15/2021 \(bund.de\)](https://www.bund.de/Content/DE/Bilder/Bildergalerie/2021/15/15_Kompakt_BBSR_Analysen.pdf)



[Quelle: Die deutsche Braunkohlenwirtschaft \(agora-energiewende.de\)](https://www.agora-energiewende.de/de/energie/braunkohle)

# Problem: Structural change in lignite mining areas and car-based mobility in rural areas

- More persons with driver license
- Increase of car ownership and car use
- 10 % of households do not have a car
  - More than half of which are older than 59 and 22 % over 79
- 8 % of over 14 years olds travel at least once per month by public transport
- Trips are as often short as in metropolies
- Challenges:
  - Mobility patterns with long trips
  - How to reach out to new customers?
  - Improve accessibility of stops and headways
  - Provide alternatives for mornings and nights

<div>  <b>BUS 443</b> </div> <div> <b>Eisenhüttenstadt ▶ Schernsdorf ▶ Müllrose ▶ Frankl (O)</b> </div>											
<div>  <b>BOS</b> </div>											
<div>  <b>BUS 443</b> </div> <div> <b>Montag - Freitag</b> </div>											
Fahrtnummer	01	03	05	07	09	11	13	15	17	19	21
Verkehrshinweise	99		99	99		98	99	98	99		
	c						d	c		b	
Eisenhüttenstadt, Friedrich-List-Str. ab	.	.	.	.	.	.	13.55	.	14.45	.	.
-An der Schleuse	.	.	.	.	.	.	13.56	.	14.46	.	.
-Diesterwegring	.	.	.	.	.	.	13.57	.	14.47	.	.
-Fährstraße	.	.	.	.	.	.	13.58	.	14.48	.	.
-Am Trockendock	.	.	.	.	.	.	13.59	.	14.49	.	.
-Amtsgericht	.	.	.	.	.	.	14.02	.	14.52	.	.
-An d. Holzwohle	.	.	.	.	.	.	14.04	.	14.54	.	.
Eisenhüttenstadt, ZOB an	.	.	.	.	.	.	14.06	.	14.56	.	.
Anschlusshinweis	.	.	.	.	.	.	.	.	.	.	.
Bus 400, 401, Bhf. Glashüttenstr. an	.	6.17	6.35	.	.	.	.	.	.	.	.
Bus 440, 441, Neuzelle an	.	.	.	7.42	8.40	.	13.53	14.42	14.54	.	.
Bus 451 QualifizierungsCentrum an	.	.	.	.	.	.	.	14.40	.	.	.
Bus 454 Bahnhof, Mittelschleuse an	5.44	.	.	7.52	.	12.44	.	14.44	14.44	15.44	17.14
Eisenhüttenstadt, ZOB ab	6.02	6.27	6.40	8.11	9.11	12.50	14.07	14.45	14.56	15.50	17.20
-ArcelorMittal B112	6.05	6.30	6.43	8.14	9.14	12.53	14.10	14.48	14.59	15.53	17.23
Eisenhüttenstadt, An der Pohlitzer Mühle B112	6.07	6.32	6.45	8.16	9.16	12.55	14.12	14.50	15.01	15.55	17.25
Siehdichum, Pohlitz Pohlitzer Mühle	6.08	6.33	6.46	8.17	9.17	12.56	14.13	14.51	15.02	15.56	17.26

[https://bos-fw.de/images/pdf/plaene-regional-stadt/443\\_beide\\_altern\\_211212.pdf](https://bos-fw.de/images/pdf/plaene-regional-stadt/443_beide_altern_211212.pdf)



# CTran – project idea and team

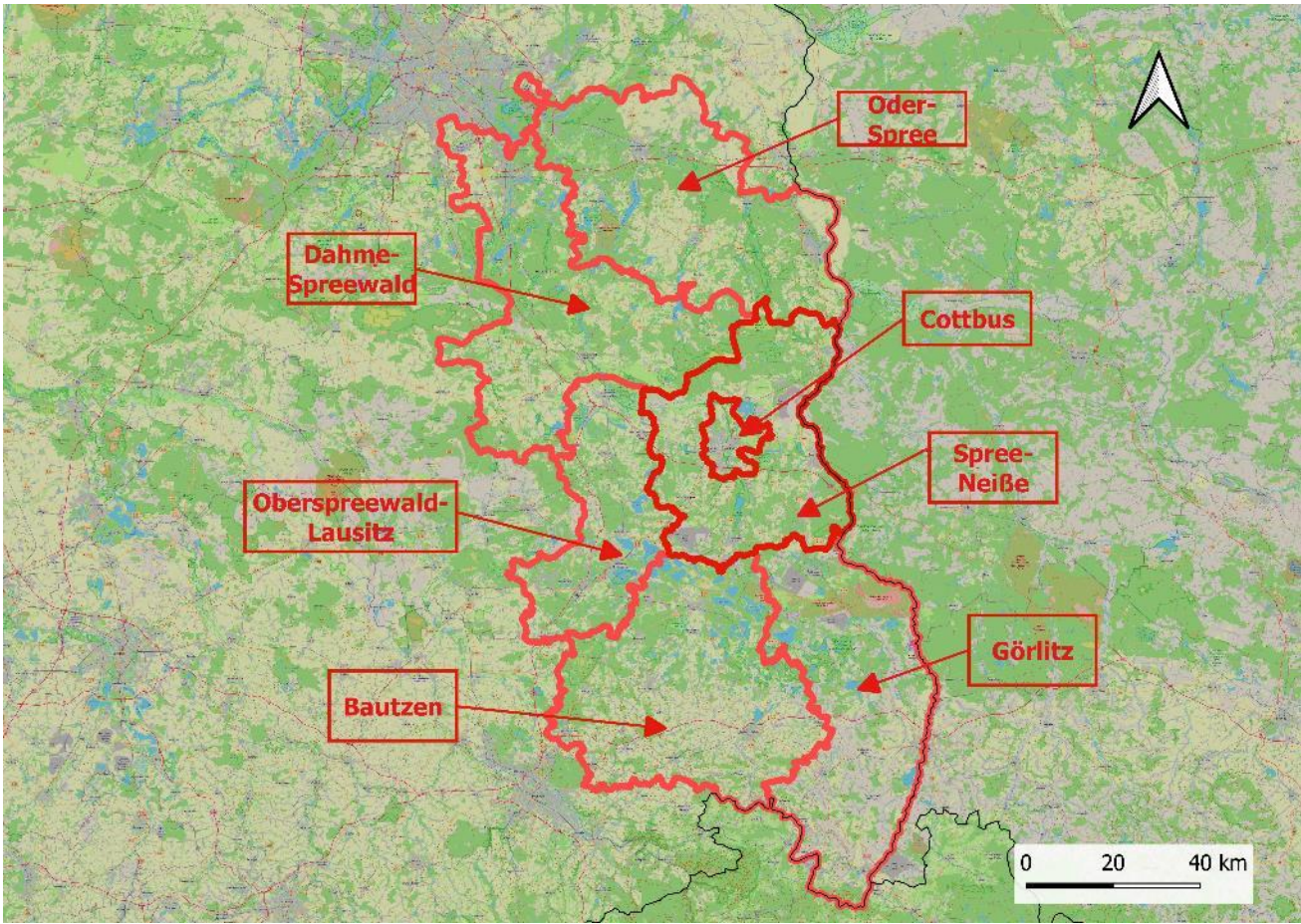
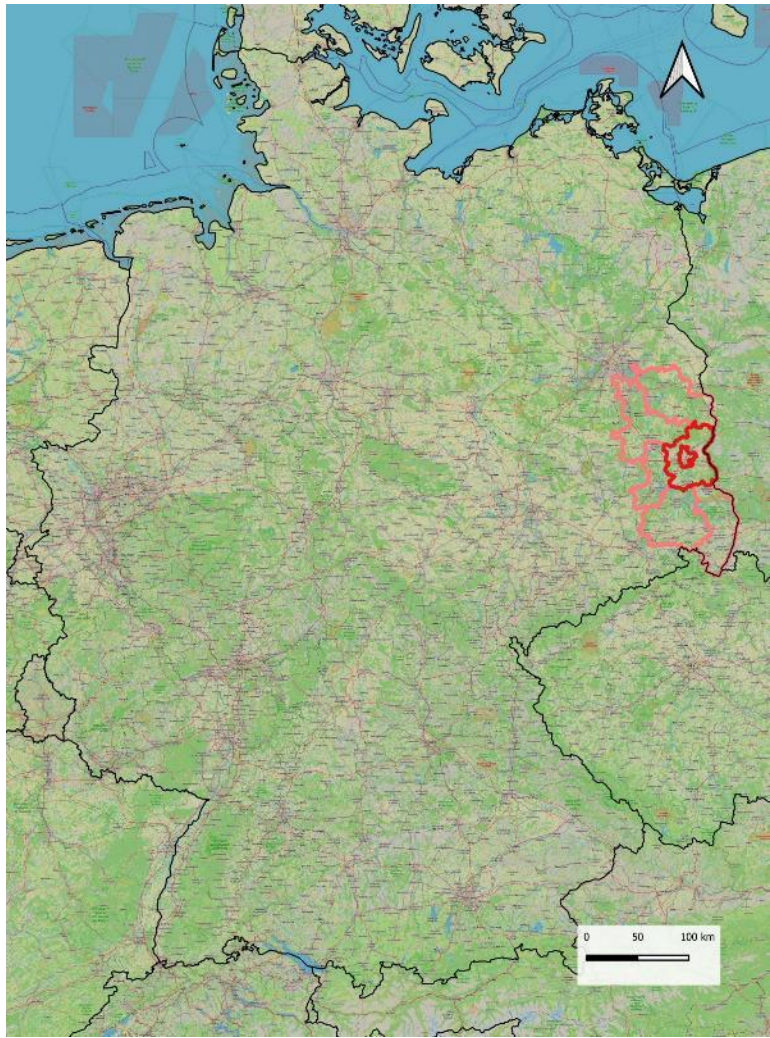
## Research question

- How to develop new mobility concepts for lignite mining and rural areas by involving users of an interactive mobility app?





# Research area: Landkreis Spree-Neiße



Quelle: OpenStreetMap Contributors



# App „Wohin du willst“



## Searching for a route

Wo startest du?

Ort, Adresse oder Haltestelle

AUSGEWÄHLTER START  
Forst, Busbahnhof

Döbern, Deutsches Haus  
Schenkendöbern, Abzweig B 320  
Spremburg, Busbahnhof  
Guben, Bahnhof

Wo geht's hin?

Ort, Adresse oder Haltestelle

AUSGEWÄHLTES ZIEL  
Döbern, Deutsches Haus

Schenkendöbern, Abzweig B 320  
Spremburg, Busbahnhof  
Guben, Bahnhof

VERLAUF

Busbahnhof, Ampfing  
Wimpasing, Ampfing  
Passau Hbf, Passau  
Thyrnau Mitte, Thyrnau  
Wasserburg, Wasserburg a. Inn

Wann möchtest du fahren?

Döbern, Deutsches Haus  
Spremburg, Busbahnhof

AUSGEWÄHLTE ZEIT

Mo., 13. Juni	14	18
Di., 14. Juni	15	19
Mi., 15. Juni	16	20

JETZT ABFAHRT ANKUNFT

## Selection



FAHRTDAUER 0:23  
FAHRT SEIT 00:05  
PREISE ANZEIGEN ab 3,50 €  
STARTZEIT 13:17  
Passau, Hauptbahnhof

FUSSWEG 56 m  
0:03

Reisebüro Niedermayer

AB 13:20 GLEIS 1  
pünktlich  
7599  
RICHTUNG → BUSBAHNHOF, HAUZENBERG  
FAHRTVERLAUF ANSEHEN

AN 13:40 GLEIS 1  
pünktlich

FAHRKARTE KAUFEN  
NUR SPEICHERN



## Purchase

FAHRKARTEN KAUFEN

TARIF - VLC  
TARIF 1 ZONE

DIREKT KAUFEN IN DER APP

Einzelfahrt Erwachsener..... 1,90 € >  
Einzelfahrt Kind (6-14 Jahre)..... 1,00 € >  
9€ Monatsticket (gültig im Monat Juni für das gesamte Nahverkehrsangebot in Deutschland)..... 9,00 € >  
9€ Monatsticket (gültig im Monat Juli für das gesamte Nahverkehrsangebot)

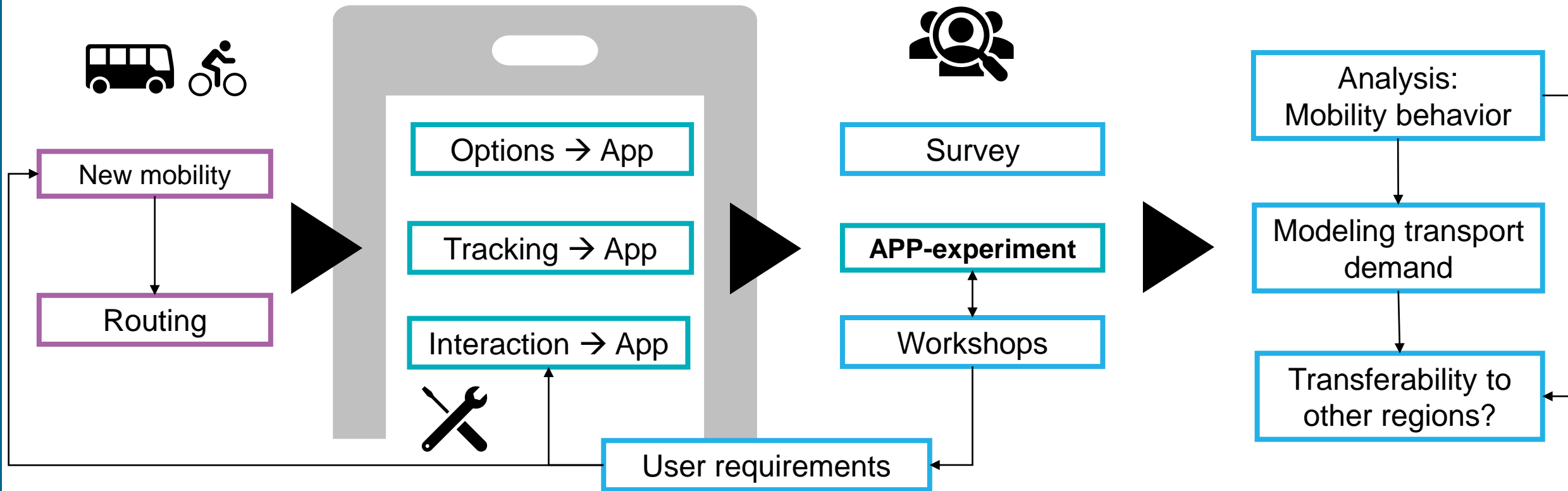
SCHLIESSEN



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# CTran - Steps



- Objective: Ensure that public transport in rural areas is attractive and based on users' needs

# Possible new mobility offers and services

## (Automated) ferries?



## On-demand bus



Quelle: Wolfram Heym 2021

## Bikesharing?



Quelle: <https://www.mvv-muenchen.de/mobilitaetsangebote/bike-sharing/index.html>



# Extension of the App for the project

## Select region during installation



## While selecting ...

Push-message with link to the survey



Choice between control and treatment group



Control group

Treatment group

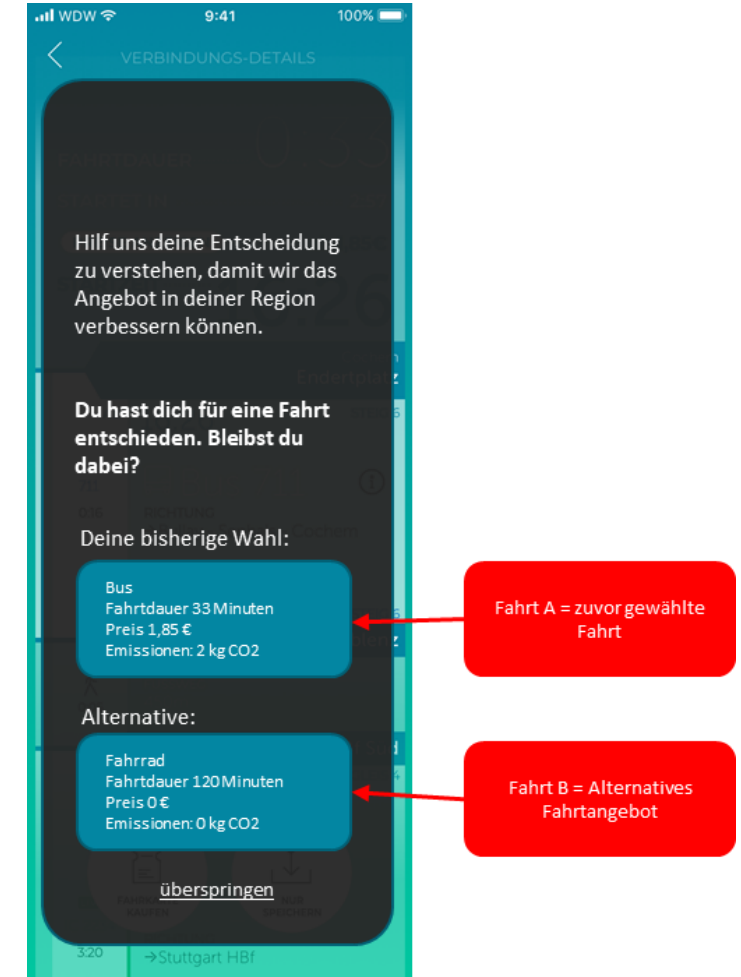


„Environment“

„Health“

# Integration of new mobility offers in the App

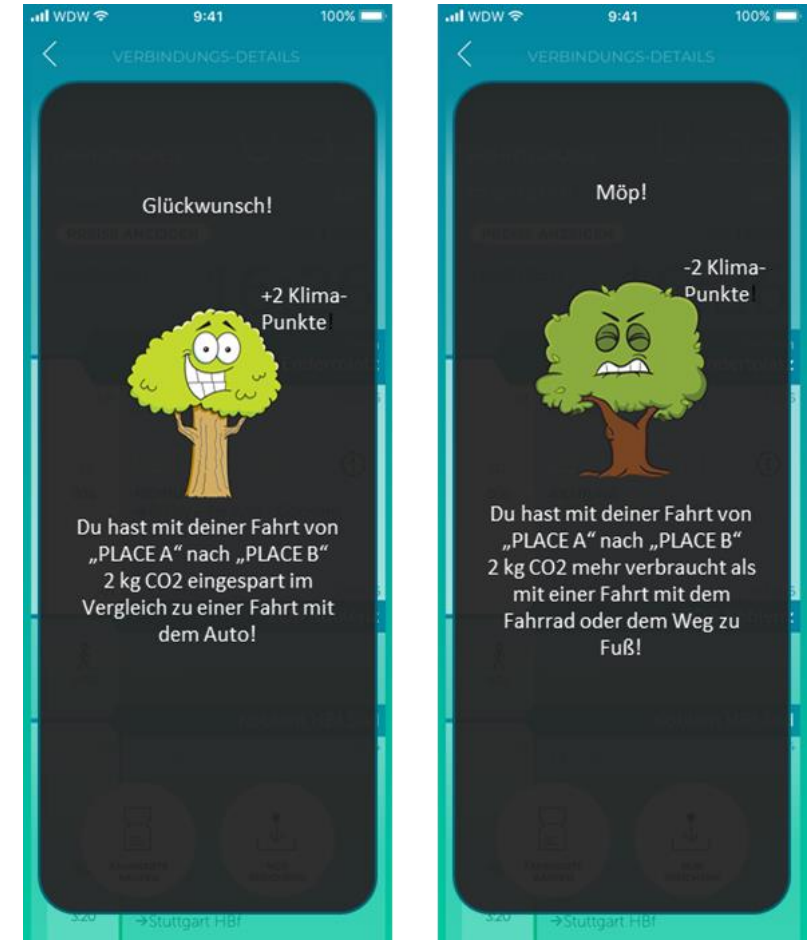
- If users want to travel they are supposed to search a route using the app
- Enter origin and destination locations
- App shows available alternatives including price, travel time and changes
- Users are supposed to choose their preferred alternative
- App shows hypothetic future alternatives including price, travel time and changes
- User decides whether they want to choose the new alternative and remains with the initially chosen one





# „Gamification“ approach

- Control group: no intervention
- Treatment group „Environment“:
  - Investigation of the relevance of environmental consciousness for mode choice by means of showing CO2 emissions
- Treatment group „Health“:
  - Investigation of the relevance of health consciousness for mode choice by means of showing calories







THANK YOU!