

For rail and infrastructure companies

Infrastructure for sustainable travel.



Farleda is developing a shared foundation for mobility data, journey planning and traceable emissions calculations. We start with European rail and want sustainable travel to become an everyday choice.

A concrete starting point for your organisation

A paid twelve-week pilot: one corridor or station cluster, authorised data, agreed reference cases and a final report. Railway operators test a planning and booking hand-off; infrastructure partners test a data or information use case. Pricing on request.

Position as of 16 October 2026

The engine combines open European timetables and realtime data, grid intensity for 31 countries and published emission factors; its ranking, data-quality and calibration algorithms are documented at farleda.eu/platform. The product preview uses synthetic data. A Passport records a plan; a signature alone proves neither travel nor avoided emissions.

Free open beta: 31 October to 31 December 2026. Secure pilot partners by year-end; production targeted from early 2027, subject to technology, contracts, data rights and funding.

Mission 2027–2030

2027 Prove the operation. · **2028** Connect across borders. · **2029** Open the infrastructure. · **2030** Make sustainable travel the standard.

Qualitative ambition, dependent on partners, data, validation and financing. Horizon Europe application planned: research partners sought; no submission or funding award.

Team and operator

Raphael Lugmayr, cofounder & CTO · Sebastian Kern, cofounder & CPO. Other contributors remain unnamed at their request.

Operator: Raphael Lugmayr & Sebastian Kern GesbR · Stoicera Group
Allerheiligen im Mühlkreis 7, 4320 Allerheiligen im Mühlkreis, Austria
UID ATU79668824 · office@stoicera.com · farleda.eu/mission

Working template · complete and agree before signature

One corridor. A clear decision.



A scoped twelve-week pilot for a railway or infrastructure organisation. This English working version follows the German pilot template v2.1. Only a completed, agreed and signed proposal establishes binding deliverables.

1 · Parties and decision ownership

Provider: Raphael Lugmayr & Sebastian Kern GesbR, trading as Stoicera Group, Allerheiligen im Mühlkreis 7, 4320 Allerheiligen im Mühlkreis, Austria; VAT ID ATU79668824.

Partner / address: _____

Authorised representative / sponsor: _____

Subject-matter owner / data contact: _____

2 · Question and boundaries

Corridor or station cluster: _____

Decision to test: _____

Data source / permitted use: _____

Start / end / reference cases: _____

Railway operators: a planning workflow and defined booking hand-off. Infrastructure partners: a bounded data or information use case. The baseline is one specified data connection and one results view; deviations are recorded in writing.

Excluded unless expressly agreed: ticket retail, safety-critical control, extensive sales-system integration, unlimited custom development and 24/7 support. Free traveller beta access is separate from this paid enterprise pilot. Contact: partners@farleda.eu.

Deliverables and acceptance.

3 · What the pilot delivers

- Scoping workshop, approved pilot sheet and data schedule.
- One specified data connection and a usable workflow based on the Farleda product.
- Evaluation against an agreed sample; 20 jointly defined reference cases as a starting point.
- A weekly review and documented scope decisions.
- Final report, defects and acceptance record, and costed follow-on proposal.

4 · Schedule and partner contribution

Weeks 1–2: problem, data rights and criteria. Weeks 3–10: implementation and testing. Weeks 11–12: evaluation and continuation decision. Dates run from the individually agreed start, not automatically from the consumer beta launch.

The partner appoints a sponsor and data contact and supplies the agreed data and approvals. Delays, additional costs and a possible exit where contributions are unavailable are documented and agreed. Farleda names a delivery owner and records dependencies at kickoff.

5 · Success criteria and decision record

Workflow / agreed reference cases: _____

Quality measure / permitted deviation: _____

Report / export / acceptance period: _____

Technical acceptance is separate from learning goals. Understanding, test usage and booking hand-offs may be measured; passenger volumes, revenue and environmental effects are not guaranteed. Silence alone does not constitute acceptance under this template.

Optional discussion annex: [Berlin–Munich corridor report v1.0](#). Its proposed case mix and thresholds apply only when expressly adopted in the signed scope. It is a public reference analysis, not an existing customer result.

A Passport records the labelled calculation state and available evidence. A ticket purchase does not prove travel; a signed plan does not prove emissions actually avoided. Baseline, factor version, person basis and limitations must remain visible.

Commercial terms and rights.

6 · Fees and support

Net fixed fee / applicable VAT: _____

Instalments / milestones / payment term: _____

Support hours / response / cost limit: _____

Pricing on request. Suggested allocation for agreement: 40% at start, 40% at the interim milestone and 20% after acceptance. Additional scope starts only after approval by both parties. Any credit towards a follow-on contract must be expressly agreed.

7 · Contract precedence, product and data

The signed individual proposal and schedules take precedence over general B2B terms. Data-protection agreements take precedence for data-protection matters. Attach each schedule with its date and version; agree the governing contract language explicitly.

The existing Farleda product, general improvements and methodology remain with their rights holders. The partner receives the agreed usage rights and results report. Source code, exclusivity and bespoke-development rights require a separate agreement; this expressly overrides general Stoicera commissioned-development provisions.

Partner data is used only for the agreed purposes. Where processing on behalf of the partner applies, an appropriate data-processing agreement is required before it begins. A reference name or logo may be used only with prior approval.

8 · End of pilot, liability and signature

No automatic follow-on contract. Agree return, deletion and any continued verification. Transfer to a future FlexCo follows the applicable legal process. Liability, insurance, exit fees and final terms require case-specific legal review; mandatory liability remains unaffected.

Schedules / versions / governing language: _____

Place / date: _____

For the provider: _____ For the partner: _____

Public working template, not a signed offer or legal approval. Complete the parties, scope, dates, fees, acceptance and governing terms before use.

One appointment. The complete journey.

Berlin-München / Berlin-Munich



Independent Farleda analysis of public sources. Not a commissioned customer pilot, a partnership with the named organisations or evidence of emissions actually avoided.

Scenario: one person travels from the Berlin urban area to an appointment in Munich. They want to arrive on time, work en route and understand the climate implications. This is a designed use case, not an observed customer journey.

A published rail connection

The DB page lists a direct ICE service on 24 October 2026: Berlin Hbf 07:37 → Munich Hbf 11:43, taking 4 h 06 min. Page snapshot 17 October, retrieved 18 October 2026. Date, availability and changes must be checked with the operator before travelling. [S1]

Two distances with explicit provenance

The 623 km rail reference comes from the historical DB VDE 8 factsheet; the 588 km road reference from the ADAC summary card. The rail distance is an analytical assumption, not a measured distance for the particular service above. The two sources do not use identical door addresses. [S2, S3]

Why this corridor?

A long direct rail service and a plausible car alternative expose trade-offs in total time, working opportunities, cost, occupancy and emissions boundaries. A German corridor fits the geographical scope of the UBA average factors. Cross-border application needs different inputs.

No lasting fare claim from a temporary quote: check tickets, reservations and cancellation terms with the seller. A car-cost comparison must separate energy, parking, wear and any rental charges. This report does not claim a price advantage.

Every number needs its context.

Reference calculation per person, one-way main leg: distance × emissions factor ÷ 1,000. It uses UBA averages for Germany in 2024, not measurements of this ICE or output from the Farleda app model. [S4]

Option	km	g CO ₂ e/pkm	kg CO ₂ e/person
Long-distance rail · reference	623	26	16.2
Car fleet mix · 1.4 people	588	164	96.4
Car fleet mix · 1 person ¹	588	229.6	135.0
Car fleet mix · 2 people ¹	588	114.8	67.5
Car fleet mix · 4 people ¹	588	57.4	33.8
Electric car · 4 people ¹	588	24.5	14.4

An 80.2 kg calculated difference

$623 \times 26 \div 1,000 = 16.198$ kg for long-distance rail; $588 \times 164 \div 1,000 = 96.432$ kg for the car fleet mix at average occupancy. The difference is 80.234 kg. Rounding happens only for display. This compares scenarios; it is not a saving attributable to Farleda.

Occupancy can change the result

¹ Car sensitivity holds the vehicle factor inferred from the average constant: $164 \times 1.4 = 229.6$ g/vehicle-km; electric car: $70 \times 1.4 = 98$. Divide by the selected passenger count. This is a simplification, not a measurement of a specific car. At four occupants, the electric-car scenario is 14.4 kg per person, below the rail reference.

Boundary: operation and energy supply, using average German electricity. Vehicle production, infrastructure and access/egress excluded. Do not apply a second occupancy correction to rail. Electricity accounting, vehicle, route and occupancy change the result. Average factors do not establish the marginal climate effect of an additional journey.

Think door to door.

Comparing only train time and driving time leaves parts of the trip out. The additions below are disclosed planning assumptions, not values taken from the timetable sources.

Component	Rail	Car
Published main leg [S1, S3]	4 h 06 min	5 h 46 min
Access / egress (assumption)	20 + 20 min	–
Station buffer (assumption)	15 min	–
Break / parking and walk (assumption)	–	30 + 15 min
Total for this planning scenario	5 h 01 min	6 h 31 min

The 90 minutes are conditional

The difference holds only with these additions and no further delay. Source endpoints differ; this is not a measured door-to-door comparison. A pilot must use identical addresses, a travel date, individual buffers and documented disruptions.

Include working conditions and accessibility

Seat availability, connectivity, luggage, accessibility and onward transport should be checked before recommending an option. We do not automatically count time on a train as productive work or monetise it here. Missing accessibility information must remain explicitly unknown.

Keep the comparison boundaries visible

The emissions table covers main legs only. The access and egress added to the time scenario are not included in that emissions total. Flying, coaches and full journey costs require further consistent inputs and are outside this first analysis.

A shared basis for decisions.

Farleda is developing the connecting software between mobility data, planning and traceable emissions information. The benefit comes from stakeholders being able to inspect the same inputs, sources and limitations.

Stakeholder	Contribution within an agreed pilot	How to assess the benefit
Travellers	Compare options with duration, changes, assumptions and sources.	Task completion, understanding and time to choose.
Railway operators	Carry an explainable option through to an agreed booking hand-off.	Hand-off correctness; usage kept separate from confirmed bookings.
Infrastructure partners	Expose missing or stale station/connection information in a defined data case.	Coverage, freshness and correct unknown states.
Employers / travel teams	Document choices using consistent comparison rules.	Reproducibility; no automatic ESG or audit approval.
Research / public bodies	Set hypotheses and evaluation rules before testing.	Repeatable findings; behaviour change studied separately.

How the case runs through the pilot

Capture the travel date and priorities; compare available connections with their source timestamps; pass the selected option to the agreed operator channel; record the decision inputs used. Missing fares, accessibility details or realtime data remain visible. The reference cases determine whether this chain works correctly.

Existing product foundation, agreed pilot scope

The code includes journey planning, route comparisons, modelled emissions and HMAC-signed planning records. The public website presents a product preview; it does not prove a production partner integration. This UBA benchmark is separate from the app model. Factors, distances, person basis and boundaries must be reconciled before combining their outputs.

Effects still to be demonstrated

A booking hand-off is not a ticket purchase; a purchase is not evidence of travel. A Passport signature checks data integrity, not travel or avoided emissions. Ridership growth, time savings and modal shift remain hypotheses to test.

Twelve weeks. A testable decision.

Proposed scope: one corridor, one agreed data connection, one results view and 20 jointly defined reference cases. Start and price are agreed individually; no partner commitment or business outcome is implied.

Weeks 1–2 · Establish the baseline

Name a sponsor, data contact and subject-matter owner. Agree data rights, identical endpoints, model and acceptance criteria. Freeze 20 cases in advance: 10 standard journeys, 5 missing/stale-data cases and 5 occupancy, powertrain or accessibility variants. This is a technical sample, not representative market evidence.

Weeks 3–10 · Integrate and evaluate

Implement the agreed connection and view. Record source, timestamp, distance, person basis, factor and result for each case. Proposed acceptance: all 20 calculations reproducible, all 5 adverse cases correctly labelled, no critical unresolved defect. Agree the criteria contractually before starting.

Weeks 11–12 · Assess value and the next step

Observe whether participants understand the options and their limits. Disclose sample sizes and denominators; do not claim causal effects without a suitable comparison group. Deliver a final report with data gaps, remedial work, operating costs and a costed follow-on proposal. Continue, remediate within a limit or stop.

The commercial decision

Pricing on request; free traveller beta access is separate from an enterprise pilot. The partner weighs integration and support effort against observed value. Farleda assesses repeatability and viable operation. Ticket retail, safety-critical control and 24/7 service are not automatically included.

Open beta: 31 October–31 December 2026. Production targeted from early 2027, subject to technical, legal and financial readiness. Stoicera Group is the current operator; a planned FlexCo or Horizon Europe application is not an incorporated entity or funding award.

Sources, dates and reuse

Source review: 18 October 2026. Historical distance, dated timetable example and annual factors describe different periods. The CSV includes inputs, formulas and sources. External sources retain their respective rights. Cite the version, retrieval date and boundary when referring to this analysis.

[S1] Deutsche Bahn · Berlin Hbf – München Hbf

Retrieved 18 October 2026. Page snapshot 17 October 2026, 00:21: direct service on 24 October 2026, 07:37–11:43, 4 h 06 min. Dated example, not a live timetable.

<https://www.bahn.de/reisen/view/verbindung/berlin/muenchen.shtml>

[S2] Deutsche Bahn · VDE 8 factsheet (2017)

Historical route factsheet: 623 km for the ICE Sprinter via Halle, Erfurt and Nuremberg. Used only as a reference distance, not confirmation of a particular train's routing in 2026.

https://www.deutschebahn.com/resource/blob/6846048/4114d6f1810c2dd15423134a57da5dd9/Alle_FactSheets-data.pdf

[S3] ADAC Maps · Berlin – München

Retrieved 18 October 2026. Summary card: 588 km, 5 h 46 min; body text: 587 km. We use the rounded 588 km. City-to-city, not identical door addresses to the railway; not measured driving time.

<https://maps.adac.de/routenplaner/route-von-berlin-nach-muenchen>

[S4] Umweltbundesamt · TREMOD 6.71B (10/2025), reference year 2024

26 g CO₂e/passenger-km for long-distance rail, 164 g for the car fleet mix, 70 g for electric cars; car occupancy 1.4. Operation including energy supply, using average German electricity. Vehicle production and infrastructure excluded.

https://www.umweltbundesamt.de/system/files/medien/366/bilder/dateien/vtv_2024_pv_tab_pdf.pdf

The report and calculation values are also available online. A pilot requires an individually agreed statement of work and separate contractual approval.

farleda.eu/for-partners/berlin-munich
partners@farleda.eu

Publisher: Farleda · Raphael Lugmayr & Sebastian Kern GesbR, Stoicera Group · Allerheiligen im Mühlkreis 7, 4320 Allerheiligen im Mühlkreis, Austria.