

OJP 2.0 - Blick in die Werkstatt

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Glauser, Matthias Günter, Christine Matt
Online-Meet-Up, **13. Mai 2024**

Systemaufgaben Kundeninformation

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Wer spricht heute zu euch?



Christoph Lucas
Product Owner
Open Journey Planner



Vasile Cotovanu
Development



Andreas Glauser
Businessanalyst SKI+



Matthias Günter
Businessanalyst SKI+

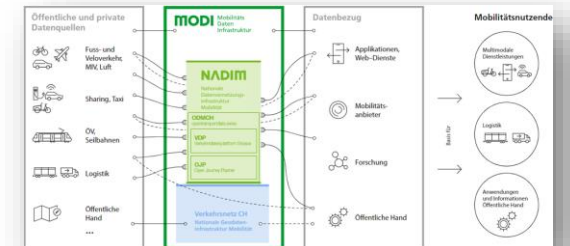
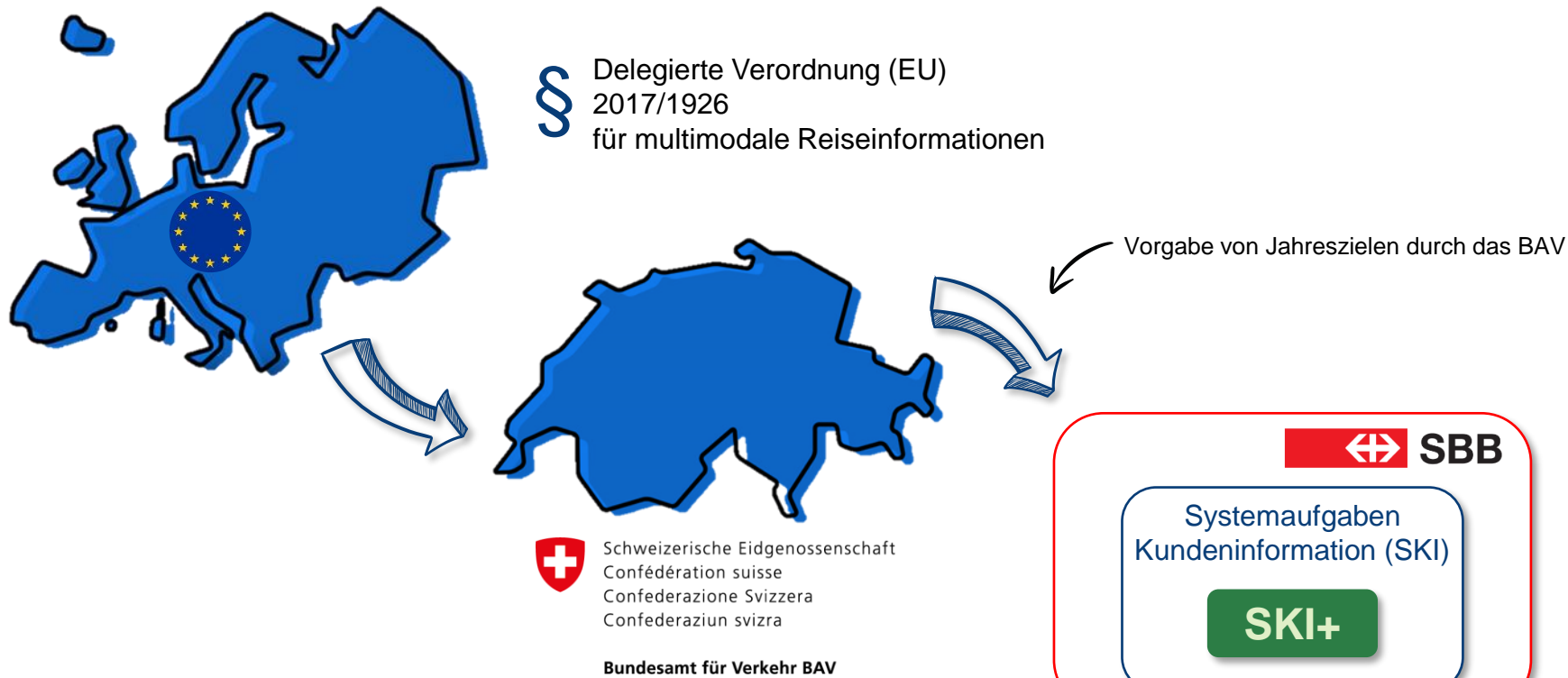


Christine Matt
Community Building SKI+

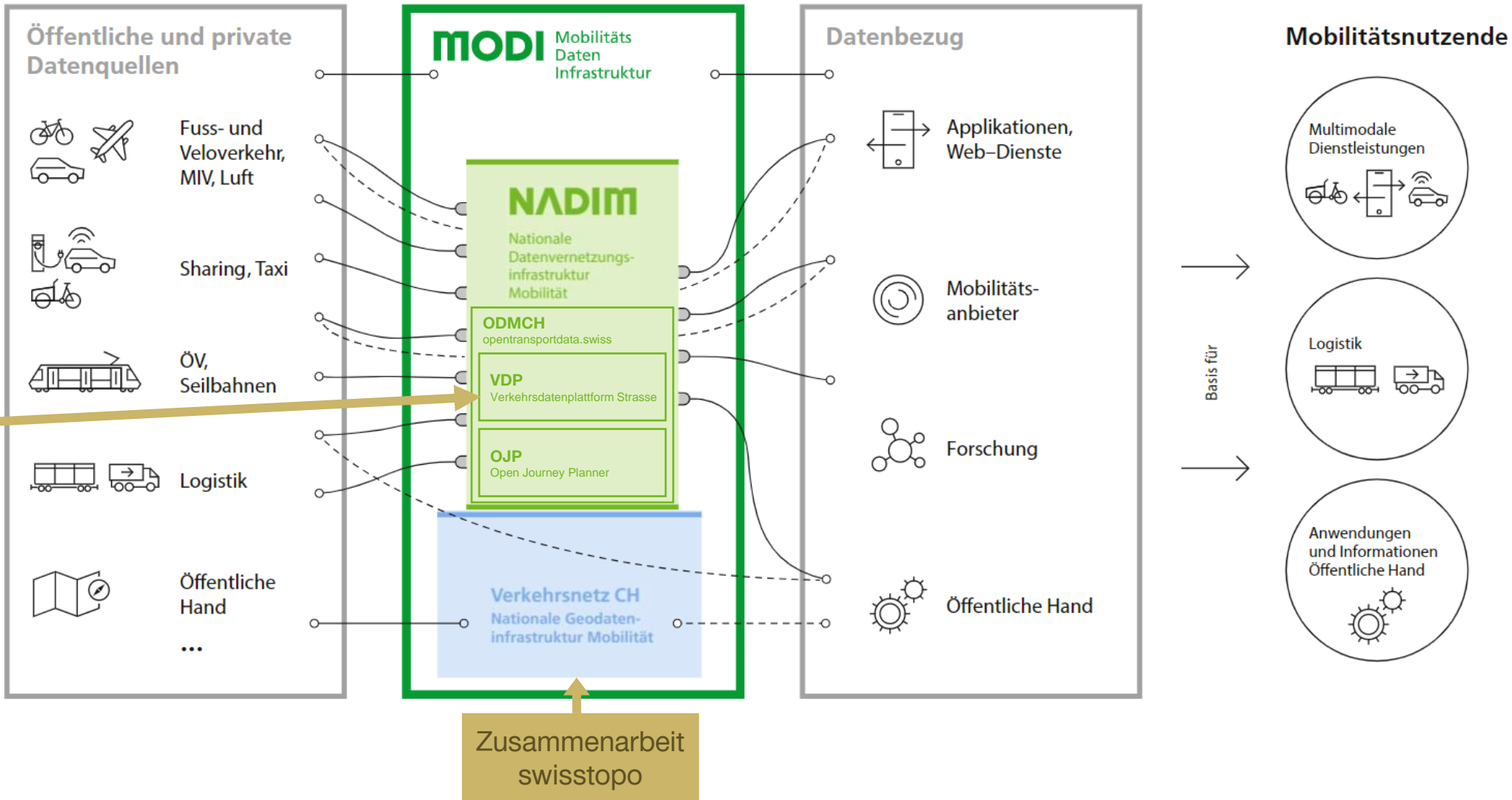
Kontakt und Feedback: opendata@sbb.ch

Woher kommen
wir?

Auftrag des Bundesamtes für Verkehr (BAV): die Delegierte Verordnung für die Schweiz umsetzen.



opentransportdata.swiss mit dem OJP und der VDP ist Teil der Nationalen Datenvernetzungsinfrastruktur Mobilität (NADIM).





Journey Search Station Board

Search

From

Wyleregg

Choose Monomodal / Multimodal

Mode at End

Choose MOT (Mode of Transport)

Car Sharing

To

46.876840,7.493113

Choose Day

Time

< Tu, 05.03.2024 >

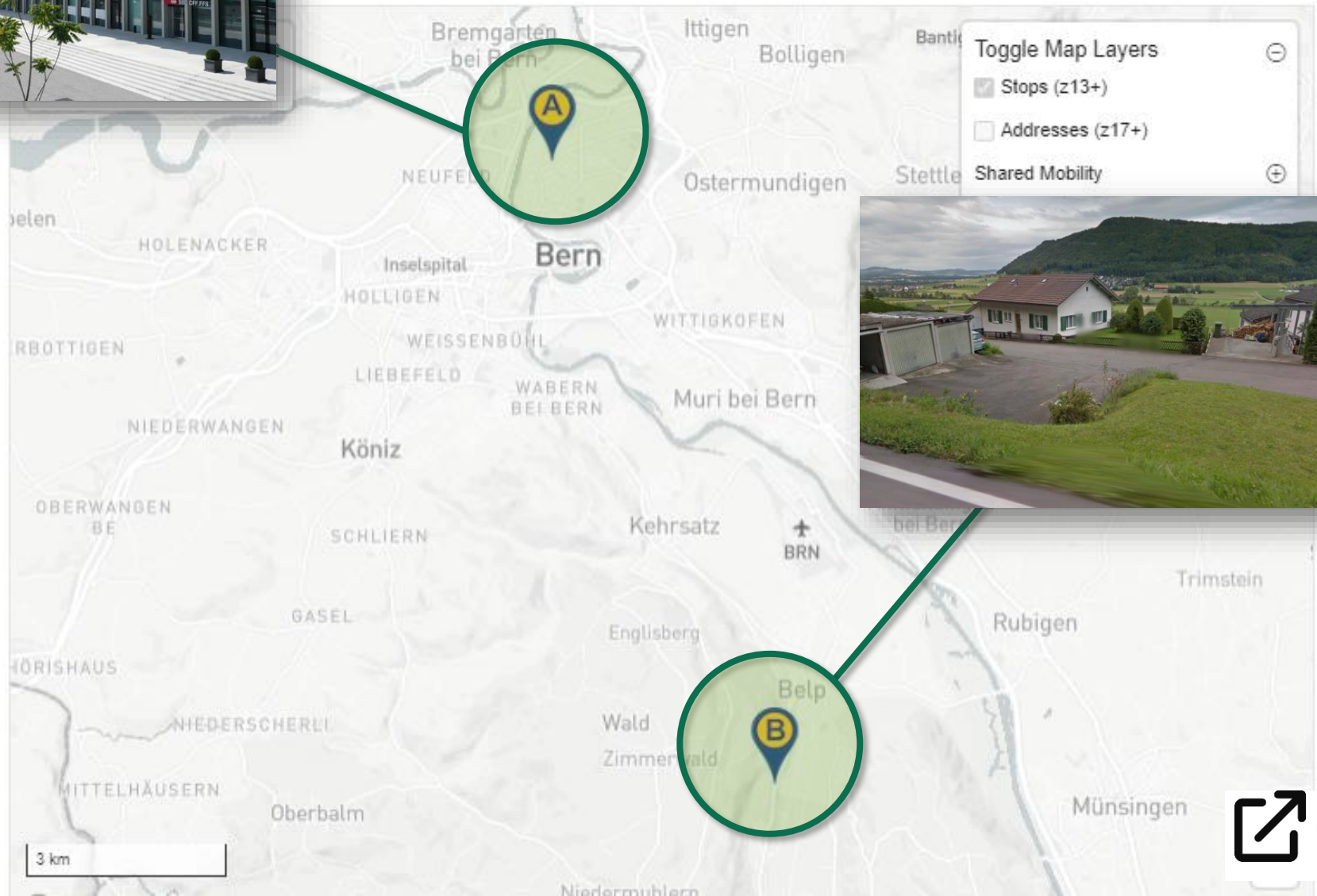
13:30

PROD INT TEST LA Beta

Search Journeys

Debug XML

[Embed](#) | [Permalink](#)




Search ▼

[Embed](#) [Permalink](#) 4.01 sec


Trip 1 - 2 transfers
38min - 17.5km


B 20 17148 (827) 6min (🚲) *NF*

Bern, Wyleregg

 Bern, Bahnhof Pl. F


Transfer 2min

 Bern, Bahnhof


 Bern, Bahnhof

T 9 6594 (827) 9min (🚲) *NF*

Bern, Bahnhof Pl. C


 Wabern, Gurtenbahn Pl. B

Walk 2min

 Wabern, Gurtenbahn

142 m 2EM Car Sharing, Renault Megane

Drive 19min

 2EM Car Sharing, Renault Megane

Belp, 46.876840,7.493113

Search ▼


[Embed](#) [Permalink](#) 4.06 sec

Trip 1 - 2 transfers
43min - 17.5km


Trip 2 - 2 transfers
55min - 12.3km


B 20 16315 (827) 6min (🚲) *NF*

Bern, Wyleregg

 Bern, Bahnhof Pl. F


Transfer 2min

 Bern, Bahnhof


 Bern, Bahnhof

B 10 7043 (827) 14min (🚲) *NF*

Bern, Bahnhof Pl. I

 Schliern, Eichmatt

Walk 5min

 Schliern, Eichmatt

331 m Mobility, Schliern b. Köniz Schaufel

Drive 27min

Mobility, Schliern b. Köniz Schaufel


Search ▼

[Embed](#) [Permalink](#) 3.90 sec


Trip 1 - 2 transfers 41min - 17.5km	15:03	15:43
Trip 2 - 2 transfers 48min - 16.1km	15:03	15:50


B 20 16598 (827) 6min (🚲) *NF* MAP

Bern, Wyleregg (♿) 15:03

 Bern, Bahnhof Pl. F (♿) 15:09

Transfer 6min MAP


 Bern, Bahnhof

 Bern


8min

531 30054 (33) 9min MAP

Bern (♿?) 15:17

 Wabern bei Bern Pl. 1 (♿?) 15:26

Walk 4min MAP

 Wabern bei Bern

250 m Mobility, Wabern Parkhaus Gurtenbahn

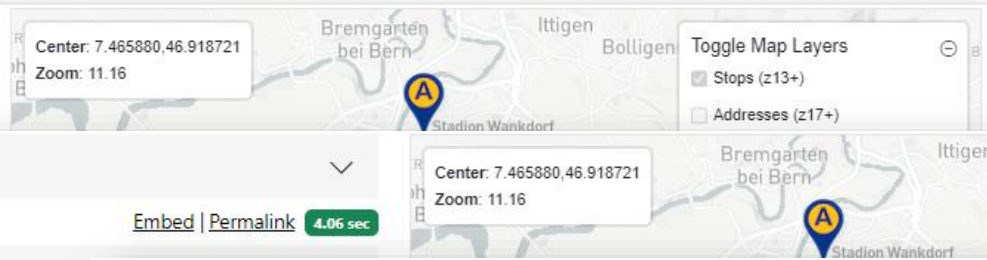
Drive 21min MAP

Center: 7.465880,46.918721
Zoom: 11.16

[Embed](#) [Permalink](#) 4.06 sec

Toggle Map Layers

- Stops (z13+)
- Addresses (z17+)



Center: 7.465880,46.918721
Zoom: 11.16

[Embed](#) [Permalink](#) 4.06 sec

Toggle Map Layers

- Stops (z13+)
- Addresses (z17+)

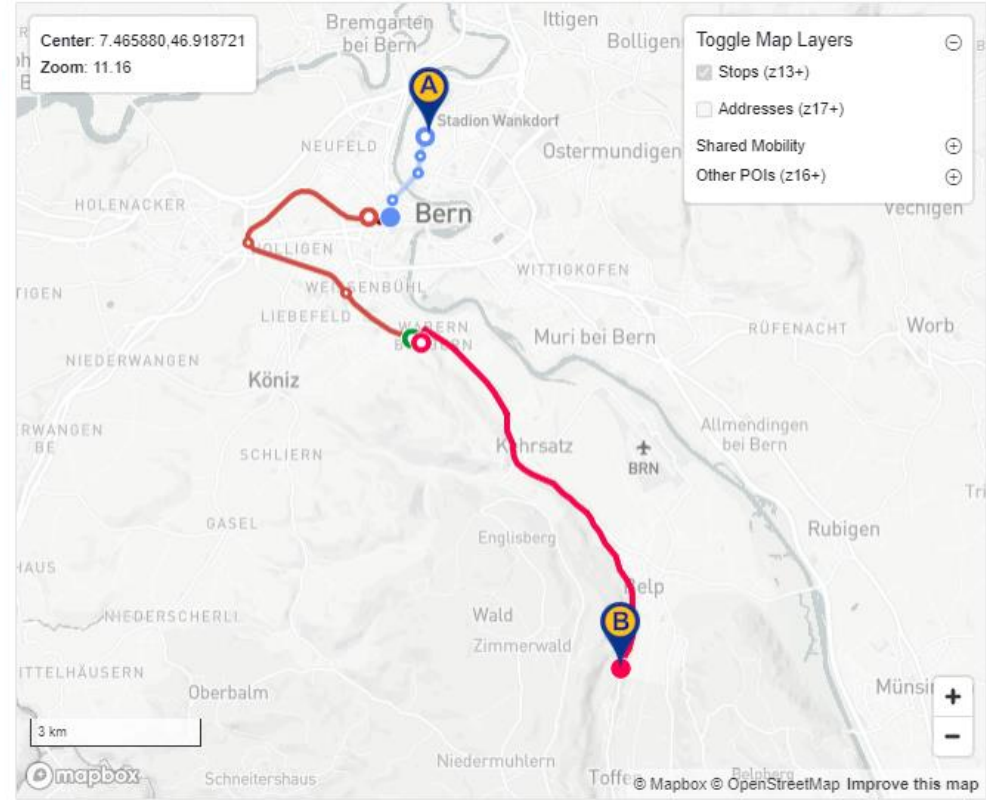


Center: 7.465880,46.918721
Zoom: 11.16

[Embed](#) [Permalink](#) 3.90 sec

Toggle Map Layers

- Stops (z13+)
- Addresses (z17+)
- Shared Mobility
- Other POIs (z16+)




mapbox

© Mapbox © OpenStreetMap Improve this map

Warum OJP 2.0

OJP 2.0 - Warum

- OJP 1.0 mehr für klassives öV-Routing
- Intermodal nicht vollständig unterstützt
- Limitierte User Preferences
- EU/1926/2017 – mehr Daten zu berücksichtigen.
- Linien, die nicht für alle brauchbar sind
- On Demand-Verkehre
- Weiterentwicklung NeTEx und Transmodel auch in Richtung Multimodalität
- Basierend auf alter SIRI-Version
(Störungsmeldungen etc massiv erweitert)



Official Journal
of the European Union

EN
L series

2024/490 13.2.2024

COMMISSION DELEGATED REGULATION (EU) 2024/490

of 29 November 2023

amending Delegated Regulation (EU) 2017/1926 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide multimodal travel information services

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport ⁽¹⁾, and in particular Article 7 thereof,

Whereas:

- (1) The Commission's Communication on a Sustainable and Smart Mobility Strategy ⁽²⁾ identifies the deployment of Intelligent Transport Systems (ITS) as a key action in achieving connected and automated multimodal mobility, and therefore contributing to the transformation of the European transport system to reach the objective of efficient, safe, sustainable, smart and resilient mobility. The strategy announced a revision of Commission Delegated Regulation (EU) 2017/1926 ⁽³⁾ to include mandatory accessibility of dynamic datasets, which is needed to achieve the policy objectives of this strategy, as well as an assessment of the need for regulatory action on rights and duties of multimodal digital service providers.
- (2) The European Green Deal ⁽⁴⁾ highlights the increasing role of automated and connected multimodal mobility, together with smart traffic management systems enabled by digitalisation, and the objective of supporting new sustainable transport and mobility services that can reduce congestion and pollution, especially in urban areas. Delegated Regulation (EU) 2017/1926 supports the shift towards more sustainable transport modes, including the use of active modes, such as walking and cycling. By mandating the accessibility of dynamic datasets and new static, historic and observed datasets, as proposed by the amendments to Delegated Regulation (EU) 2017/1926, multimodal travel information services may enhance the information and service to the passenger, to boost multimodal mobility and reduce emissions, in line with the objectives set out in the European Green Deal.
- (3) The European strategy for data ⁽⁵⁾ describes how making more data available is essential for tackling societal, climate and environment-related challenges. The strategy emphasises the benefits that data-driven innovation will bring for citizens and proposes the creation of EU-wide common, interoperable data spaces in strategic sectors, including a common European mobility data space. In that respect, Delegated Regulation (EU) 2017/1926 contributes to the increased accessibility and sharing of data on multimodal travel information. By mandating the accessibility of dynamic datasets as proposed by the amendments to Delegation Regulation (EU) 2017/1926, more data will be made accessible and shared, in line with the objectives of the European strategy for data.

⁽¹⁾ OJ L 207, 6.8.2010, p. 1.
⁽²⁾ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 'Sustainable and Smart Mobility Strategy – putting European transport on track for the future' (COM(2020) 789 final of 9.12.2020).
⁽³⁾ Commission Delegated Regulation (EU) 2017/1926 of 31 May 2017 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide multimodal travel information services (OJ L 272, 21.10.2017, p. 1).
⁽⁴⁾ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 'The European Green Deal' (COM(2019) 640 final of 11.12.2019).
⁽⁵⁾ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 'A European strategy for data' (COM(2020) 66 final of 19.2.2020).

ELL: http://data.europa.eu/eli/reg_del/2024/490/oj

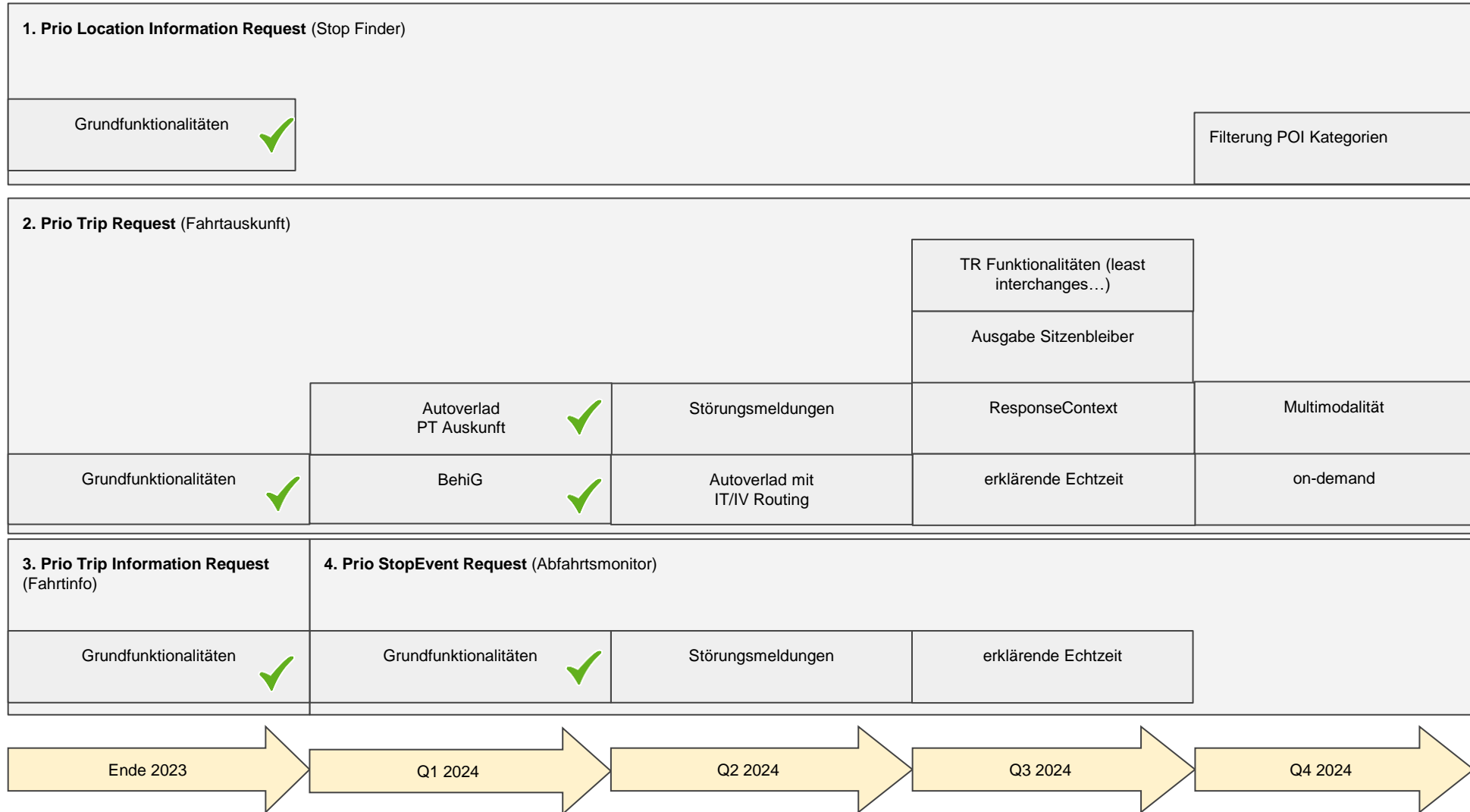
1/13

<https://eur-lex.europa.eu/legal-content/DE/ALL/?uri=CELEX%3A32017R1926>

https://eur-lex.europa.eu/eli/reg_del/2024/490/oj

Roadmap OJP 2.0-Umsetzung

Umsetzung OJP 2.0



Neue Funktionalitäten mit OJP 2.0

Neuen Funktionalitäten mit OJP 2.0

Neue Dienste/Abfragen

- Statusabfrage (vom OJP-Service)
- Verfügbarkeit (inspiriert von TRIAS)
- Verfeinerung/Aktualisierung TRR (inspiriert von TRIAS)
- Teil-Neuberechnungsdienst TCR (neu)
- Informationen zu Linien

Aktualisierung

- Weitere Optimierungsmethoden
- Angleichung an EPIAP (NeTEx Teil 6), z.B. Unterstützung für PathLink, AccessibilityFeature
- Mehr Möglichkeiten für Fehlerbehandlung
- Neue Filter: Operator, Tarifzonen
- Zusätzliche Beispiele
- ...

Neue Konzepte

- Formationen (von SIRI 2.1)
- Belegung (von SIRI 2.1)
- Unterstützung des bedarfsgerechten Verkehrs
- Mehr Informationen für Shared-Mobility
- Weitere Angleichungen an Transmodel von CEN

Änderungen (ohne Anspruch auf Vollständigkeit)

- IDs aktualisiert
- Viele Vereinfachungen: z.B. Leg statt TripLeg
- Erklärende Echtzeit
- Mehrwertsteuersatz in Prozent
- Umgestellt auf SIRI 2.1
- Behebung von Fehlern
- ...

Minimale BehiG Info aktuell

```
<LegAlight>
  <siri:StopPointRef>ch:1:slويد:7000:4:7</siri:StopPointRef>
  <StopPointName>
    <Text xml:lang="de">Bern</Text>
  </StopPointName>
  <NameSuffix>
    <Text xml:lang="de">NO_DATA</Text>
  </NameSuffix>
  ...
</LegAlight>
```



```
<LegBoard>
  <siri:StopPointRef>ch:1:slويد:7180:2:22</siri:StopPointRef>
  <StopPointName>
    <Text xml:lang="de">Thun, Bahnhof</Text>
  </StopPointName>
  ...
  <NameSuffix>
    <Text xml:lang="de">PLATFORM_ACCESS_WITH_ASSISTANCE</Text>
  </NameSuffix>
  ...
</LegBoard>
```



```
<LegBoard>
  <siri:StopPointRef>ch:1:slويد:90019:0:2</siri:StopPointRef>
  <StopPointName>
    <Text xml:lang="de">Bern, Sonnenhof</Text>
  </StopPointName>
  <NameSuffix>
    <Text xml:lang="de">PLATFORM_ACCESS_WITHOUT_ASSISTANCE</Text>
  </NameSuffix>
  ...
</LegBoard>
```



Multimodales Routing (zukünftig)

1. Vorschläge ausgeben
TR-Service (verbessert)

B1 eScooter temporary overview

VereinfachterOJP TripRequest mit Cycle am Anfang oder Ende. Zu Performance-Zwecken geht man davon aus, dass direkt ab Start- und Zielcoordinate ein Cycle zur Verfügung steht.

Von: Gallusstrasse (St. Gallen) 24
Nach: Zürich Selnau

Abfahrt Jetzt Suchoptionen

Erste **Früher** Später Letzte

1 Std. 23 Min. PT	1 Std. 19 Min. eScooter	Bike Sharing	P ODV
----------------------	------------------------------------	--------------	----------

17:01 - 18:29 1 Std. 28 Min. Preis nicht verfügbar
🚲 > 🚆 IC1 > 🚆 S4

17:15 - 18:38 1 Std. 23 Min. Preis nicht verfügbar
🚶 > 🚆 EC > 🚲

17:01 - 18:29 1 Std. 28 Min. Preis nicht verfügbar
🚲 > 🚆 IC1 > 🚆 S4 > 🚲

2. Kunde wählt einen Trip aus
TCR-Service (neu)

B2 eScooter temporary details

Anzeige Fahrtdetails.

17:15 - 18:38 1 Std. 23 Min.

🚶 > 🚆 EC > 🚶 > 🚲 Voi

< ZURÜCK ↻

17:15 Auf dem Damm (St. Gallen) 17
🚶 ↳ Fußweg: 930 m, 14 Min.

17:29 St. Gallen, St. Gallen
+0

🚆 ↳ 2 Zwischenhalte, 58 Min.

18:27 +0

18:30 eScooter
🚲 ↳ Fahrweg: 1.3 km, 7 Min. **check**

18:38 Zürich Selnau

3. Echtzeit Aktualisierung zu
Continuous-Legs
TRR-Service (neu)

B3 eScooter confirmed

Bei einem der vorgeschlagenen Trips wird nun die definitive Verfügbarkeit für den entsprechenden Mode angefragt.

17:15 - 18:38 1 Std. 23 Min.

🚶 > 🚆 EC > 🚶 > 🚲 Voi

< ZURÜCK ↻

17:15 Auf dem Damm (St. Gallen) 17
🚶 ↳ Fußweg: 930 m, 14 Min.

17:29 St. Gallen, St. Gallen
+0

🚆 ↳ 2 Zwischenhalte, 58 Min.

18:27 Zürich HB Gleis 31
+0

18:33 Voi, voiscooters.com:4dd72dae-b31d-423b-bba1-aaaebc38da73
🚲 ↳ Fahrweg: 1.3 km, 7 Min. **book**

18:41 Zürich Selnau

Autozug IV routing mit "Own Car"

```

<Duration>PT18M51S</Duration>
<ContinuousLeg>
  <LegStart>
    <GeoPosition>
      <siri:Longitude>7.65148</siri:Longitude>
      <siri:Latitude>46.5834</siri:Latitude>
    </GeoPosition>
  </LegStart>
  ...
  <Service>
    <PersonalModeOfOperation>own</PersonalModeOfOperation>
    <PersonalMode>car</PersonalMode>
  </Service>
  ...
  <Service>
    <PersonalModeOfOperation>own</PersonalModeOfOperation>
    <PersonalMode>car</PersonalMode>
    <Mode>
      <PtMode>rail</PtMode>
      <siri:RailSubmode>vehicleTunnelTransportRailService</siri:RailSubmode>
    </Mode>
  </Service>
  ...
</LegEnd>
<Service>
  <PersonalModeOfOperation>own</PersonalModeOfOperation>
  <PersonalMode>car</PersonalMode>
</Service>
<Duration>PT8M3S</Duration>
<LegTrack>
  ...

```

Journey Search
Station Board

Search ▼

[Embed](#) | [Permalink](#) | [PROD](#) | [BETA](#) | [SBB](#) | [USER XML](#)

Trip 1 - 2 transfers	00:12
41min - 35.4km	00:53

Drive 18min
MAP

Löttschbergstrasse, Frutigen

Kandersteg, BLS Autoverlad Löttschberg

Ride Autoverladezug 15min
MAP

Kandersteg, BLS Autoverlad Löttschberg

Goppenstein, BLS Autoverlad Löttschberg

Drive 8min
MAP

Goppenstein, BLS Autoverlad Löttschberg

Hohtenn, Löttschentalstrasse

Center: 7.861352,46.477667
 Zoom: 9.52

10 km Leuk Wiler Steg VS Raron

mapbox

17

Umwandlung OJP 1.0 -> OJP 2.0 (80%)

Im Generellen:

- [api-explorer \(opentransportdata.swiss\)](http://api-explorer.opentransportdata.swiss) speichere Request und Response
- Lade XSD herunter <https://github.com/VDVde/OJP/tree/develop>
- Verknüpfe XML mit XSD in XML Spy (oder verwende xmllint)
- Ändere version="1.0" nach version="2.0"
- Ordne alle siri-Elemente an den Namespace siri zu (ServiceRequest, RequestTimestamp, RequestorRef (xmlns hinzufügen xmlns:siri=<http://www.siri.org.uk/siri>
- OJP namespace ohne Namen (ist Default-namespace)
- Entferne alle ojp: - Präfixe
- Einkürzung von Namen: LocationName → Name
- Änderung von Parametern wie IncludeRealtimeData → UseRealtimeData

Spezialitäten für TripResults:

- Places beinhaltet Place und nicht Location
- Weitere Abkürzungen TripId, ResultId, LegId → Id, TripLeg → Leg
- PublishedLineName → PublishedServiceName
- OperatorRef muss in eine Gruppe gekapselt werden OperatorRefs
- Attribute/Text → Attribute/UserText
- TransferMode → TransferType
- Attribute/siri:xyzFacility müssen in Attribute/Facility gekapselt werden.

New SDK OJP 2.0

JavaScript, iOS, Android

OJP 2.0 Repos and SDKs

Start: **openTdataCH** Github organisation

<https://github.com/openTdataCH>

ojp-demo apps

Angular / JS CLI / iOS / Android

ojp-android

Kotlin

ojp-ios

Swift

ojp-js

TypeScript

ojp-sdk

"meta" repo

<https://github.com/openTdataCH/ojp-sdk>

openTdataCH

Overview Repositories 33 Projects 7 Packages Teams 8 People 30

openTdataCH
Open-Data-Plattform öV Schweiz
19 followers Bern, Switzerland <http://opentransportdata.swiss> opendata@sbb.ch

Pinned

- ojp-sdk** (Public) Meta OJP SDK repo ☆ 2
- ojp-demo-app-src** (Public) OJP Demo GUI TypeScript ☆ 10

Repositories

Find a repository... Type Language

- ojp-android** (Public) OJP Android SDK
Kotlin ☆ 0 MIT 0 0 1 Updated 1 hour ago
- ojp-js** (Public) OJP Javascript SDK
TypeScript ☆ 4 MIT 1 1 1 Updated 6 hours ago
- ojp-ios** (Public) Open Journey Planner SDK for iOS
Swift ☆ 0 MIT 0 3 2 Updated 20 hours ago

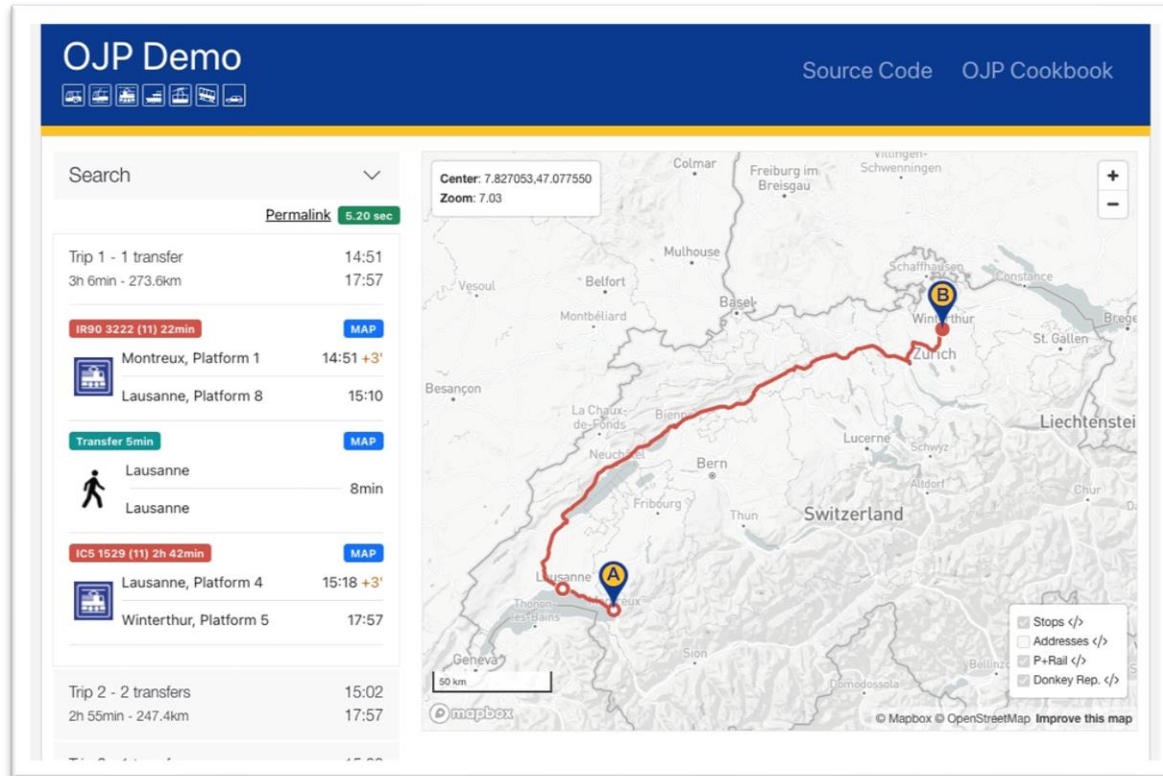
OJP 2.0 SDKs

SDK	OJP 1.0	OJP 2.0
JavaScript / TypeScript	ojp-js	ojp-js <i>feature/ojp-v2</i> branch
iOS	-	ojp-ios
Android	-	ojp-android

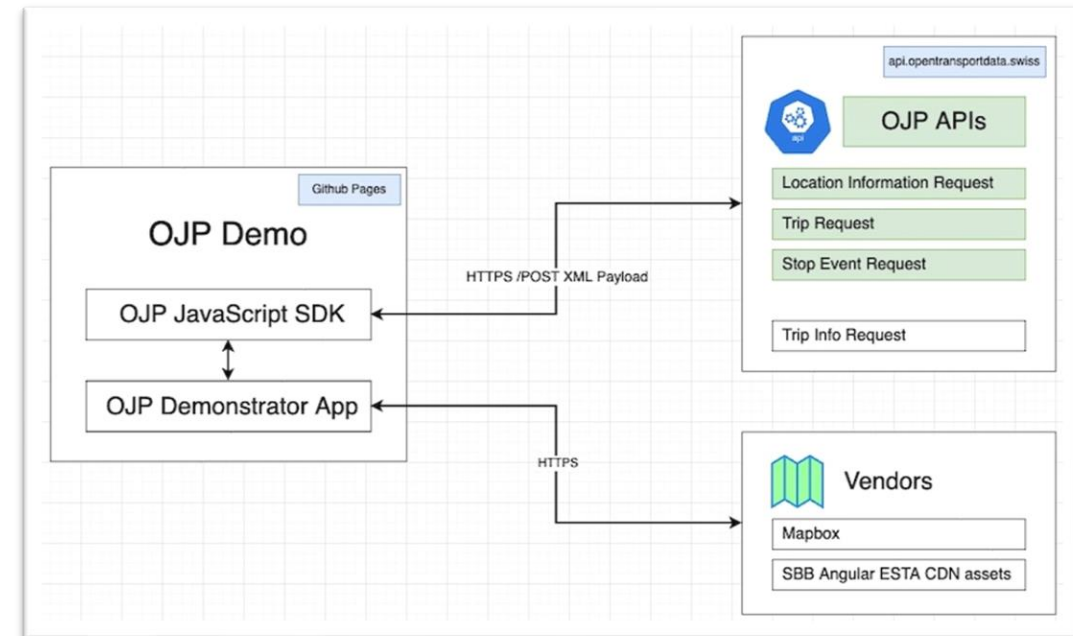
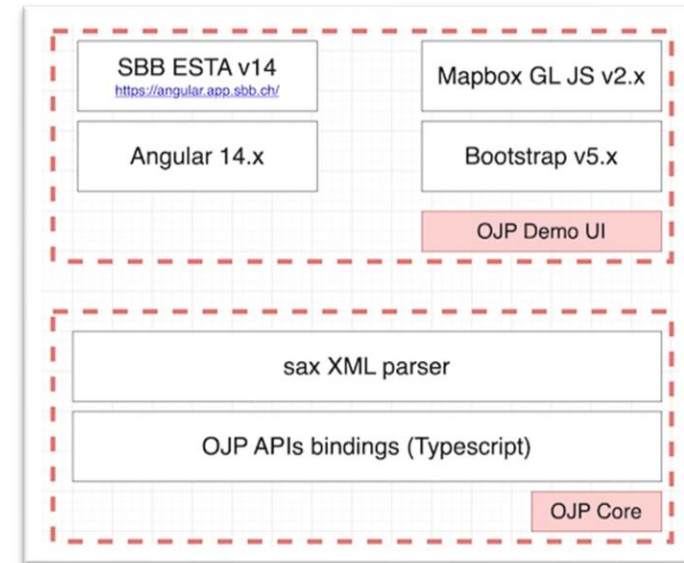
OJP APIs

SDK	LIR	TripRequest	TripInfoRequest	StopEventRequest
JS	✓	✓		✓
iOS	✓	2024 Q2		
Android	✓	2024 Q2		

OJP Demonstrator App



- Angular, OSS WebApp
- ojp-js Typescript SDK
- SBB Angular Library



OJP 2.0 Demo App

OJP Demo - BETA - OJP 2.0

[Source Code](#)
[Docs](#)
[OJP Cookbook](#)

Journey Search
Station Board

Search

[Embed](#) | [Permalink](#) | [PROD](#) | [BETA](#) | [SBB](#) 0.38 sec

Trip 1 - 1 transfer		19:00
37min - 13.2km		19:37
<div style="display: flex; justify-content: space-between; align-items: center;"> B 2351 (122) NF MAP </div>		
Gurten Kulm		♿? 19:00
Wabern (Gurtenbahn)		♿? 19:15
<div style="display: flex; justify-content: space-between; align-items: center;"> S3 (33) MAP </div>		
Wabern bei Bern		♿? 19:18 +1'
Pl. 2		♿? 19:33
Bern Wankdorf		♿? 19:33
Pl. 7		♿? 19:33
Trip 2 - 1 transfer		19:30
37min - 13.2km		20:07
Trip 3 - 1 transfer		20:00

- non-prod version, unstable
- in-sync with OJP Demo App
- starter for other demo apps

<https://tools.odpch.ch/ojp-demo-v2>

OJP 2.0 SDK Roadmap

<https://github.com/openTdataCH/ojp-sdk>

The screenshot shows the GitHub repository page for openTdataCH/ojp-sdk. The 'Issues' tab is active, displaying 15 open issues. The issues listed are:

- #22 LIR request with both filters "stops" and "address" only gives stops back (opened 4 hours ago by terencebls)
- #20 OJP 2.0 LIR should conform to XSD (bug) (opened yesterday by vasilie)
- #19 Define minimal TR request/response for OJP 2.0 that conforms with XSD (documentation) (opened yesterday by vasilie)
- #18 OJP 2.0 LIR Name search with "Bern S" and Type=address doesnt return any results (bug, search-quality) (opened 2 days ago by vasilie)
- #17 OJP 2.0 LIR Circle with Type=address doesnt respect the Circle area (bug, search-quality) (opened 2 days ago by vasilie)
- #16 OJP 2.0 Name = "Genova" + Restriction.Stop gives 500 error (bug, search-quality) (opened 2 days ago by vasilie)
- #14 Define a way to update initial config values (opened 2 weeks ago by r3to)
- #13 OJP 2.0 LIR BBOX with Type=address doesnt respect the BBOX (bug, search-quality) (opened 3 weeks ago by vasilie)
- #12 OJP 2.0 LIR "Bern" + no Restrictions throws an error (bug, search-quality) (opened 3 weeks ago by vasilie)

- Entrypoint for starting development
- Create Issues + Bugs OJP
- Meta Documentation + Models (XSD)
- PRs / Contributions are welcomed
- New Features

The screenshot shows the 'LocationInformationRequest - OJP v2.0' web interface. It is divided into three main sections:

- Initial Input:** Contains form fields for 'GeoRestriction Circle' (with a 'Live Map Center' button), 'Center Longitude (WGS84)' (7.450381), 'Latitude (WGS84)' (46.962984), and 'Radius (meters)' (550). There are also 'Restrictions' for 'Type' (stop, address) and 'Number of results' (100).
- Request XML:** Displays the XML payload for the request, including headers for version, encoding, and schema, and a body with request details like timestamp and requestor reference.
- Results: 16 locations:** Shows a map with 16 numbered location points and a list of corresponding stop names: 1. Bern, Wylerhaus stop; 2. Bern, Breifeld stop; 3. Bern, Schulhaus Wylergut stop; 4. Bern, Wylerbad stop; 5. Bern, Grimselstrasse stop; 6. Bern, Wyleregg stop; 7. Bern, Winkelriedstrasse stop.

Resources OJP 2.0

Relevante Links

- OJP 2.0 Produktion (nicht produktiv): <https://api.opentransportdata.swiss/ojp20>
API-Schlüssel auf Anfrage (opendata@sbb.ch)
- Schema und Hauptwebseite: <https://github.com/VDVde/OJP/tree/develop>
- Demo App <https://tools.odp.ch/ojp-demo-v2>
- Github <https://github.com/openTdataCH/ojp-sdk>

Datasets

- n/a

Cookbook

- <https://opentransportdata.swiss/de/cookbook/ojp2entwicklung/>

Fragen & Diskussion

OJP-Community



Unser Ziel: Eine aktive Community

- **Austausch und Networking:** Regelmässige Meet-Ups und Updates zur Schnittstelle OJP
- **Feedback** in puncto Qualität und Anwendbarkeit



Die Benefits für euch im Überblick:

- Passgenaue Services
- **Exklusive Info-Updates** zu anwenderspezifischen Neuerungen und Weiterentwicklungen



Registrieren und Teil der Community werden:

Unter opendata@sbb.ch melden, Motivation & aktuelle Entwicklungen kurz vorstellen und dabei sein!



Christine Matt | Community Managerin | opentransportdata.swiss

Mobil +41 79 56 72 944 | christine.matt@sbb.ch

Call for Speaker



DINAcon

digitale Nachhaltigkeit in der Mobilität

21. November 2024 / im PROGR, Bern; dinacon.ch

Das Motto der diesjährigen DINAcon lautet:

"Zukunftsmodelle für eine digital souveräne und (digital) nachhaltige Schweiz"

Bitte um Rückmeldung bis zum 27. Mai 2024

an christine.matt@sbb.ch