

### KDE, when's my next flight? Exploring free alternatives for digital travel assistants

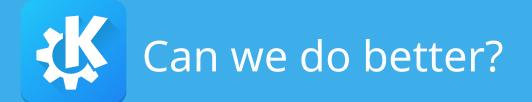
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Volker Krause

vkrause@kde.org @VolkerKrause



- TripIt, Google, Apple, etc.
  - Extract booking information from email
  - Show unified itinerary
  - Calendar integration
  - Monitor for delays/changes
- Price: "free" (ie.: your privacy)



- Privacy by design
- Free software, open data
- Budget: a bit of spare time



- This is more about data than code
- Personal data
  - Booking emails
- Static data
  - Where is airport "VIE"?
- Dynamic data
  - Is flight OS 232 on time?



- De-facto standard data model: schema.org
- Email
  - Structured data (JSON-LD, Microdata)
  - Unstructured data (text, HTML, PDF)
- Apple Wallet passes
- Barcodes (IATA BCBP, UIC 918.3, etc)



- Unicode CLDR
  - Localized country/region information
- OpenStreetMap
  - Timezone maps
- Wikidata
  - Every data we ever wished for



- No free data sources
- Few (pseudo) standard formats
  - GTFS (see kde:publictransport)
  - Apple Wallet passes
- Vendor-specific REST APIs exist
  - varying terms and conditions
  - API keys required

## So much for the theory...



- kde:kpkpass (part of KDE PIM 18.08)
  - Library for reading Apple Wallet passes
- kde:kitinerary (part of KDE PIM 18.08)
  - schema.org data model
  - Structured data extraction
  - Unstructured data extraction
  - Augmentation with Wikidata knowledge



• Data extraction plug-in since KDE PIM 18.04

From: no-reply@austrian			
Date: 14/04/2018 10:22	oking.pdf		
TXL	· <del>}</del>	V 🖽 Show Calendar	pag
10/08/2018 17:05 CEST	OS 232	O Add To Calendar 10/ ♀ Show 'Berlin - Teg ♀ Show 'Wien' On M	
VIE	*	T	tinerary
18/08/2018 09:00 CEST	OS 225	18/08/2018 10:20 CEST	



## kde:itinerary

### My Itinerary

#### 🛗 Friday, 10 Aug 2018

Temperature: 20.1 °C / 26.3 °C Precipitation: 0 mm					
→ OS 232 TXL → VIE	17:0	05:00			
Departure from Berlin - Tegel: 17:05:00					
GERMANY Terminal: - Gate: - Seat: -	Ŷ	>			
Arrival at Wien: 10 Aug 2018 18:25:00					
AUSTRIA	Ŷ	>			
Temperature: 20.6 °C / 31.9 °C Precipitation: 0 mm					
🏠 a&o Wien Hauptbahnhof					
Sonnwendgasse 11 1100 Wien					
AUSTRIA Check-in time: 15:00:00	Ŷ	>			
ck-out time: 18 Aug 2018 10:00:00		:			

### < > My Itinerary > Flight > Boarding Pass My Itinerary

👃 brussels airlines			Seat Gate 13C A			
BRUSSE	LS		BERLIN			
BRU		<b>→</b>	TXL			
Flight	Date	Boarding	Class			
2591	22/04/2018	20:20	CHECK			
Passenger		Status				
KRAUSE/VOLKER			LH			

 $\equiv$ 

### Sonntag, 10.09.17 ▲ Entering Switzerland Some incompatible power sockets: Type J Some incompatible power plugs: Schuko → LX 963 TXL → ZRH 06:15 Departure from Berlin Tegel: 06:45 My Itinerary Donnerstag, 15.06.17 A Entering United Kingdom People are driving on the wrong side. No compatible power sockets: Type G + 4U 8462 TXL → LHR 12:25

Departure from Berlin-Tegel: 12:55



- It's possible!
- It's necessary: a lot of personal data involved
- Forget those privacy concerns for a minute, we need test data ;-)
  - Flights, trains, rental cars, hotels, buses, event tickets, restaurants, etc.
- More integration needed

# Questions?



- Airline boarding passes
  - "Where in the World Is Carmen Sandiego? Becoming a secret travel agent", Karsten Nohl, Nemanja Nikodijevic, 33C3, 2016, video
  - "How to get good seats in the security theater? Hacking boarding passes for fun and profit", Przemek Jaroszewski, DEF CON 24, 2016, slides (has tons of further references)
- Data Model and Formats
  - https://schema.org
  - https://developers.google.com/gmail/markup/reference/
  - Apple Wallet pass files
  - GTFS: https://developers.google.com/transit/