



## Inter-modal Real-time Passenger Information and Managed Transfer Availability in Public Transport

**Pilsen, 5 - 6 April 2011, Conference on Smart and Healthy Municipal Public Transport**

***Manfred Retka***  
***Director German Branch***

# Trapeze: the Company

- Business unit of Constellation (TSX: CSU)
  - Headquartered in Toronto, Canada
- 
- The logo for Constellation Software Inc., featuring a blue square with a white 'C' and stars, followed by the text 'CONSTELLATION SOFTWARE INC.' in a blue, sans-serif font.
- **Trapeze ITS:** Headquarter in Neuhausen, Switzerland
    - ⇒ Supplies since 40 years **I**ntelligent **T**ransportation **S**ystems to the public transport industry
  - **Trapeze Group:** European Headquarter in Århus, Denmark
    - ⇒ Delivers solutions to the private and public passenger transport sector
  - 30+ offices across North America, Europe and Australia
  - 1,100+ customers worldwide

# Agenda

- Customer perceptions
- Managed transfer availability between different operators and transport modalities
- European standardization and core technologies for connecting control centers of different transport authorities
- Inter-modal passenger information concept of the transit association of Zurich

# What Shapes Passengers' Perceptions?

- **Topical information** influences **perceived waiting and travelling time**
  - ⇒ at the beginning of a journey
  - ⇒ on-trip
- **Operation** of public transport is **perceived as...**
  - more reliable
  - more on time
  - more convenient

# What's Different?

**The goal:** Making the **highest number of planned transfers** available to the passenger.

**The communication method:** Enhancing **in-vehicle information**

- in real-time
- about **available** transfers at next stops

**The consequences:**

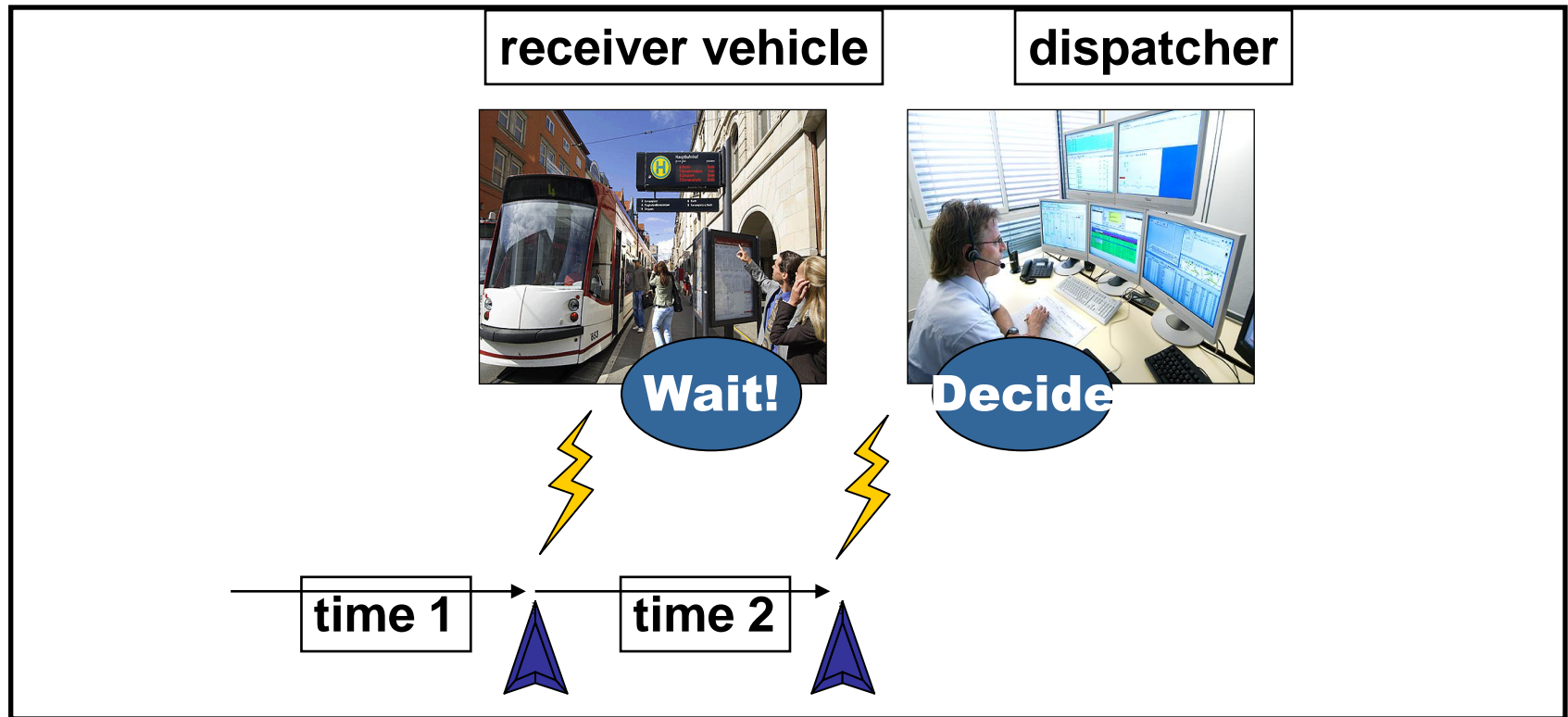
**Transfer information** is available

- already in the **feeder** vehicle (and not only at the stop)

**Transport authorities**

- must be able to “**guarantee**” the transfer
- by **ordering** the receiver vehicles **to wait** for the feeder

# Managed Transfer Availability (MTA): Approach



Within a pre-defined time slot, the system **automatically orders** the **receiver vehicles to wait** for the feeder vehicles.

# Managed Transfer Availability (MTA): Conclusions



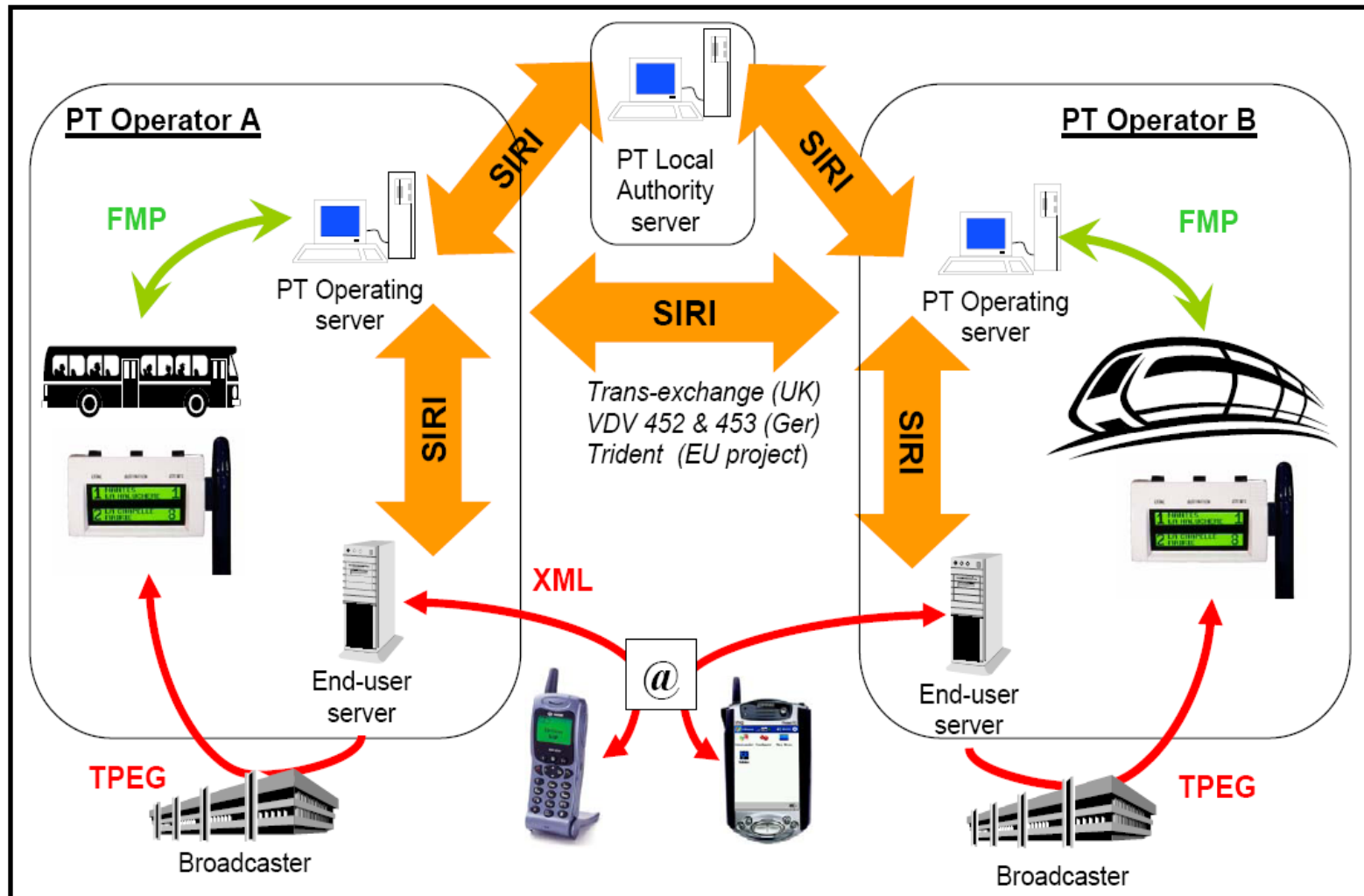
- Adequate and dedicated information must be made instantly available to passengers and drivers alike
- Securing transfers must not lead to slowing down local public transport at a network level
- Pay special attention when **different operators** at local, regional and national levels are involved

## Core Technology – CEN Framework

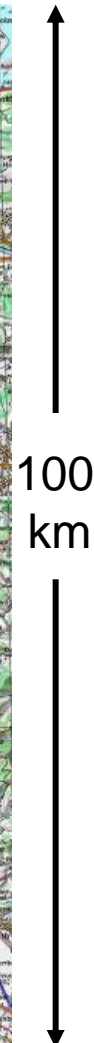
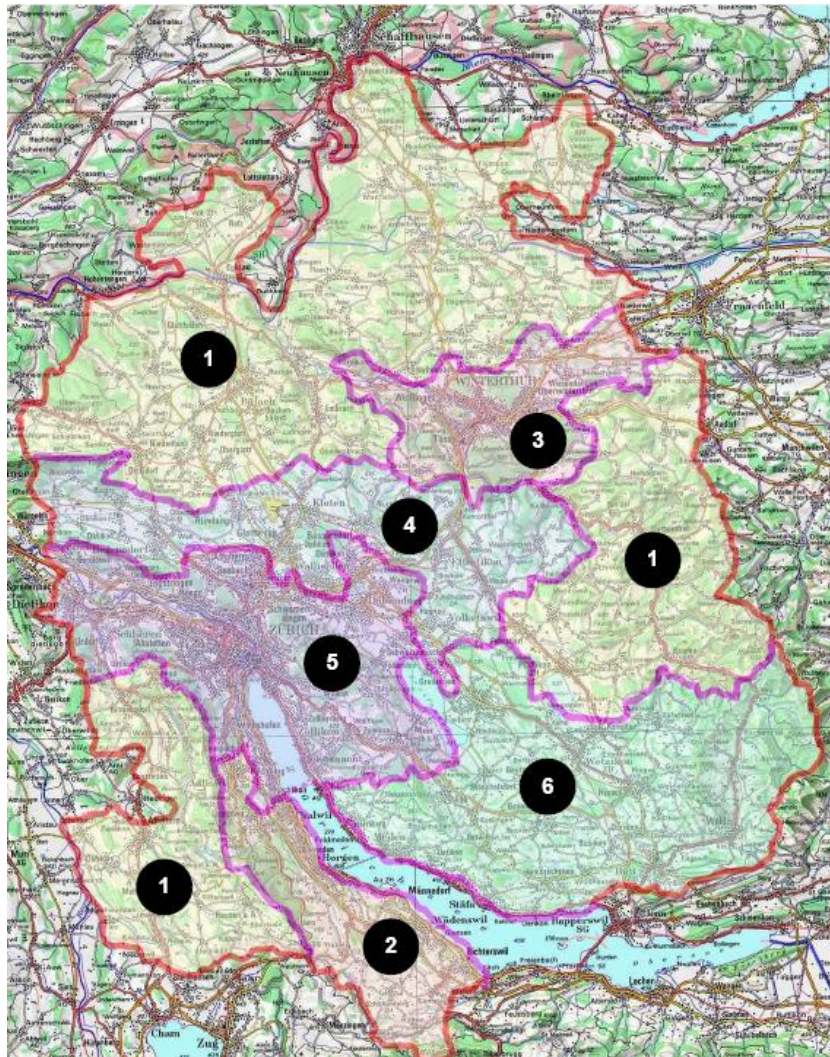
- **Core technology:**
  - The **VDV-453** real-time interface
  - part of the basis of the **SIRI** “Standard Interface for Real-Time Information”
- **SIRI definition: A communication layer** which defines:
  - **common procedures** for requesting and exchanging public transport data
  - an **interface between control centres** of an Automatic Vehicle Monitoring System



# SIRI: Basic Setup



# Inter-modal Passenger Information ZVV Zürcher Verkehrsverbund



SIRI / VDV Interface to:



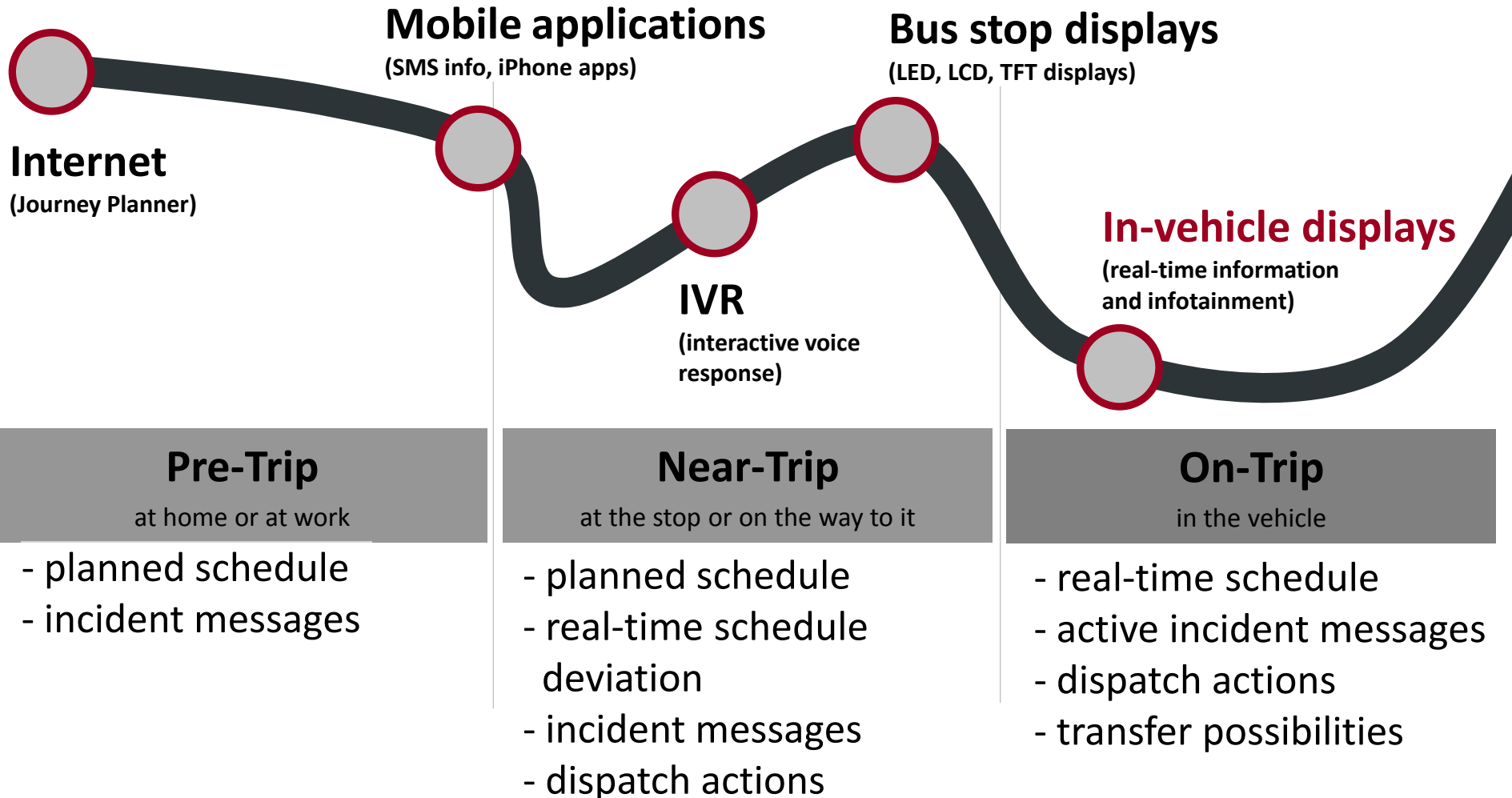
### Real-time information provided:

- to **train** passengers    ⇒ actual **bus** departure times
- to **bus** passengers    ⇒ regional and national **train** departure times

### Benefit:

- Passengers in **all feeder vehicles** will learn of **all transfers available** to them at the next stop regardless of whether this is a **city bus**, a **regional bus**, a **regional light rail train** or a **national train**.

# Channels of passenger information



# Inter-modal Passenger Information ZVV

## In-vehicle “Perlschnur” representation



# Inter-modal Passenger Information ZVV

## In-vehicle Transfer Screen

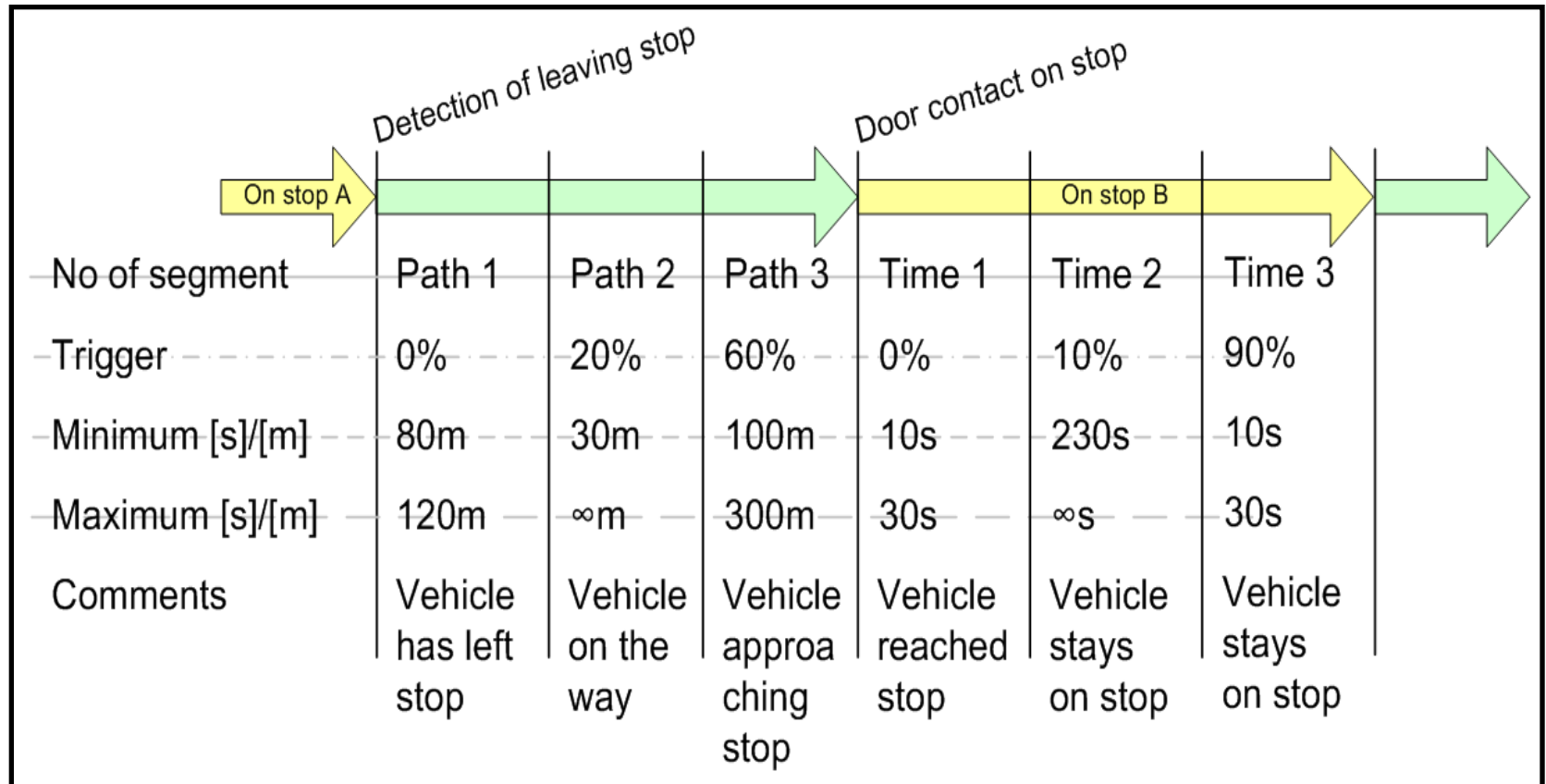


759		Zürich Flughafen, Bahnhof					Stopp			
		S2	S16		510	520	530			
		731	732	733	765	768	781			
Anschlüsse							Gleis/ Kante	Status	Hinweis	
16:31	510	Stadel b.N., Neuwis-Hus					A	knapp	2' später	
16:32	S16	Herrliberg-Feldmeilen					9A/9B	knapp		
16:34	IR	Luzern					7	o.k.	15' später	
16:35	S2	Effretikon					8	o.k.		
16:37	S660	Winterthur, Hauptbahnhof via Bülach, Bahnhof							fällt aus	
16:37	530	Bülach, Bahnhof					G	o.k.		
16:39	768	Zürich Oerlikon, Bahnhof						o.k.		
16:42	EC	Zürich HB					3	o.k.		



# Inter-modal Passenger Information ZVV

## Segmentation Strategy










**location-dependent layouts** for every segment: RTPI, Advertisement, Video, Multimedia

# Inter-modal Passenger Information ZVV

## Internet-based at selected locations

### Winterthur, Hauptbahnhof

	Route	Destination	Platform	Departure
	10	Oberwinterthur	C	0 Min
	3	Bettenplatz	B	2 Min
	1	Oberwinterthur	E	3 Min
	12	Bruderhaus	A	6 Min
	4	Tössfeld	C	7 Min
	7	Wülflingen	B	9 Min
	2	Seen	E	11 Min



**SWB**  
Energie und Wasser  
Starke Partner. Bonn/Rhein-Sieg.

*Sie haben es in der Hand:*  
**www.bonn-natur.de**

www.stadtwerke-bonn.de



Now



2°C

Fri



-4° | 2°

Sat



1° | 2°

Sun



1° | 7°



### Bahnverkehr: SBB-Züge waren 2009 pünktlicher

Fri, 15 Jan 2010 12:51:26 GMT

88 Prozent der SBB-Kunden sind im Jahr 2009 pünktlich gereist. Dies ist eine Verbesserung gegenüber dem Vorjahr von 2,6 Prozent.

20min.ch





# Summary

- To make public transport more attractive, **passenger information** is one of the **critical success factors**.
- Inter-modal in-vehicle dynamic passenger information that includes information on **available transfers** at next stops is still an **exception**.
- In ZVV Zurich this function has been put successfully into operation based on the **VDV-453 real-time interface**
- Transport Authorities can manage their transport infrastructure **more effectively**

# Thank you for your attention!

