

The current state of mobility in Europe

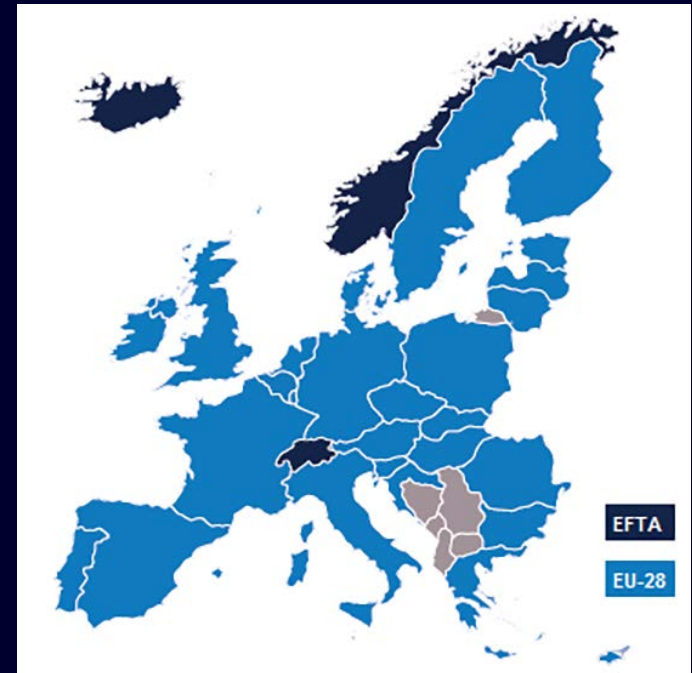
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Scope of 4-hour door-to-door

- Which journeys are we interested in?
 - Passenger journeys (only), i.e. DATASET2050 puts the passenger at the centre
 - Passengers with an air segment (even if small *cf.* other segments)
 - Air segment:
 - ✓ commercial air transport
 - ✗ excluding private aircraft/PAVs (if the *only* air transport mode)

Scope of 4-hour door-to-door

- Geographic coverage?
 - Journeys within 32 European countries:
 - EU-28
 - EFTA (Iceland, Liechtenstein, Norway and Switzerland)
 - Schengen Agreement unchanged
 - Excluding EU candidate countries and overseas territories
 - *Pax travelling into this area from a non-EU origin?*
 - *Pax leaving this area for a non-EU origin?*



Scope of 4-hour door-to-door

- Five distinct phases to a trip:
 - Door-to-kerb (D2K): urban
multi-modal, public/private transport
 - Kerb-to-gate (K2G): airport
check-in, baggage drop-off, security, to boarding
 - Gate-to-gate (G2G): airside
from boarding to alighting (incl. connections), flight processes
 - Gate-to-kerb (G2K): airport
from alighting to baggage reclaim, immigration, customs
 - Kerb-to-door (K2D): urban
multi-modal, public/private transport

Within 4 hours
(+ buffers)

Data requirements

- Door-to-door phases = supply
- We also need to consider demand
 - **Demographic**: macro description of population characteristics
population, income
 - **Passenger demand**: estimate of pax demand within Europe
modal share, traffic flows, access to transport modes
 - **Passenger types**: to help define archetypical passengers
journey purpose, passenger itinerary
 - **Competing services**: development of HSR network and travel substitution effects due to future technologies (demand / supply)
competing modes, competing technology

Data sources

- Multiple sources identified
 - Detailed data or high-level information
 - Datasets *may* be available...but cost prohibits their use
- Data more readily available for 'current' scenario
 - Current: quantitative data available
 - Future: qualitative information

Data sources

- Data requirements grouped into broad categories
 - Current and future scenarios considered...

Data sources

Data groups	Scenario		
	Current	Mid-term	Long-term
Demographic:			
General and regional statistics			
Economy and finance			
Population and social conditions			
Industry, trade and services			
Passenger demand:			
Passengers by mode			
Passenger requirements			
Connectivity			
Future strategies by mode	N/A		
Passenger type:			
Passenger profiles			
Passenger behaviour			
Passenger en-route requirements			
Door-to-kerb / kerb-to-door:			
Modal share			
Catchment area			
Kerb-to-gate / gate-to-kerb:			
Check-in time profile			
Security screening time			
Exit time profile			
Immigration queuing time			
Airside capacity (gate-to-gate):			
Airline schedules			
Flight and environment data			
Airport capacity			
Competing services:			
Air-rail competition			
Competing technology			

Data sources

- Demographic data – good range of sources
 - Published data
 - Forecasts available

Data sources



Data sources

- Kerb-to-gate / gate-to-kerb data – limited sources
 - Specific airports data / reports
 - No known forecasts

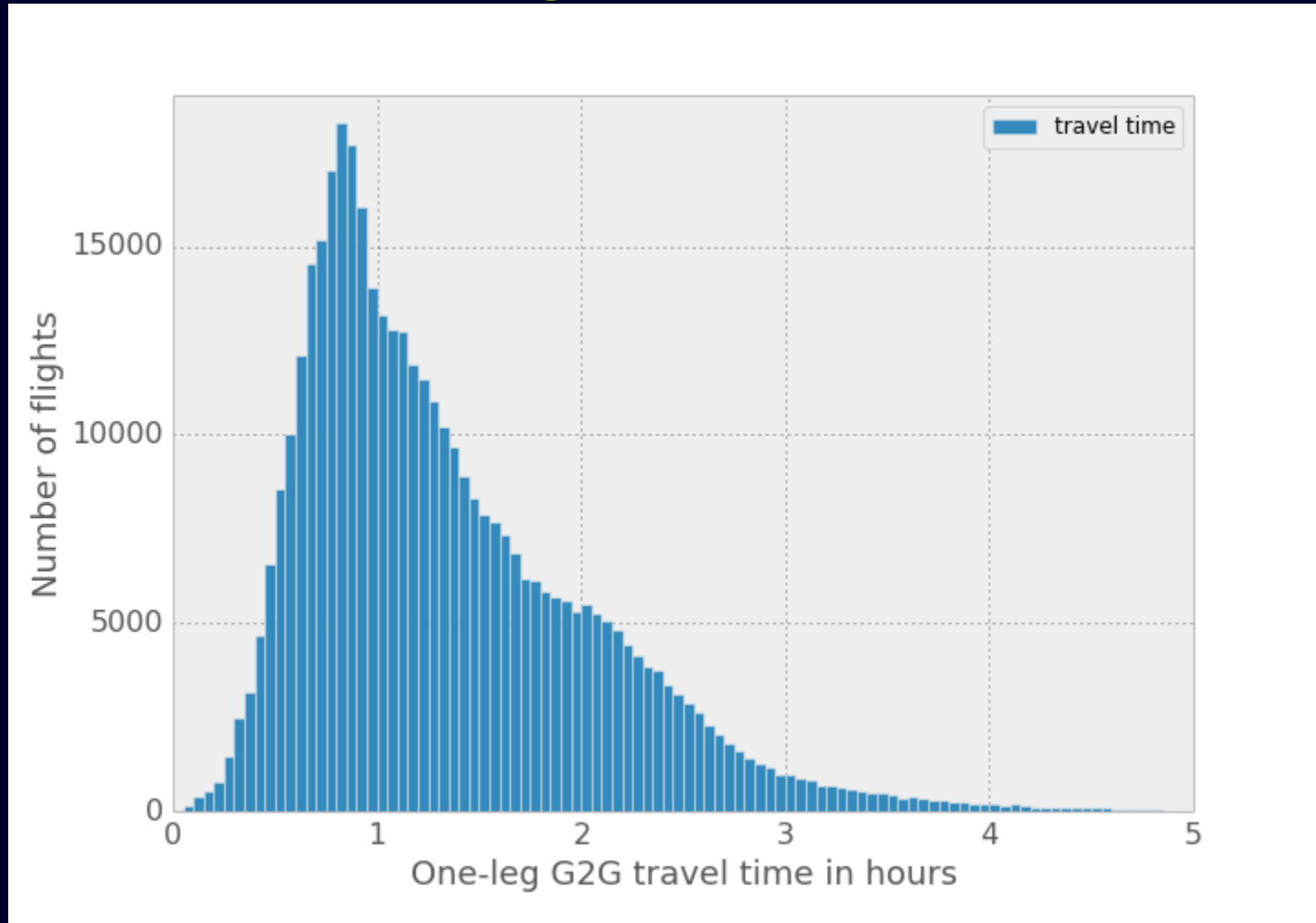
Data sources



Mobility: how far are we from the target?

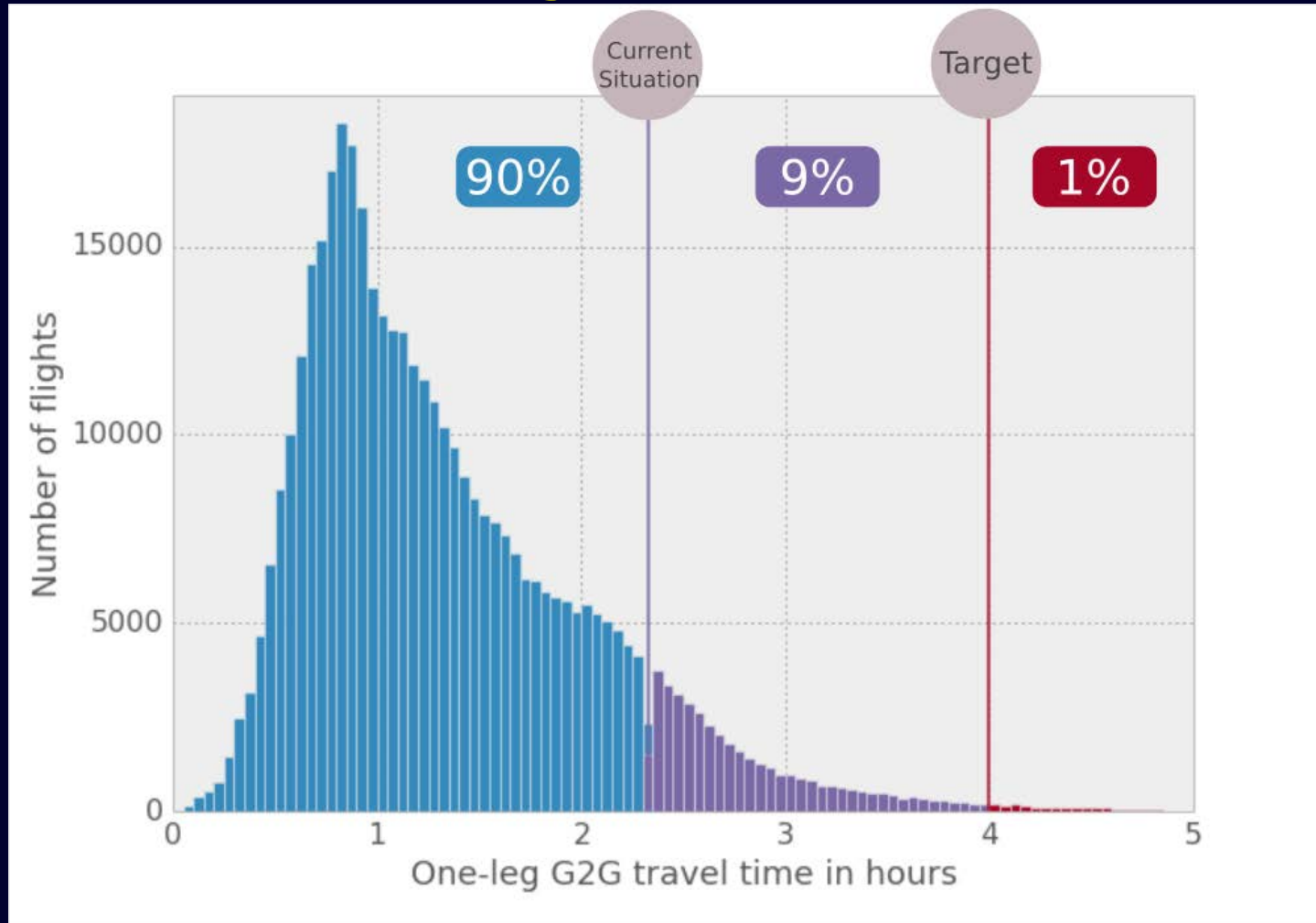
- Data review process complete
- Next step: deciding on requirements as inputs for the model
- Part of this process is carried out through this workshop!
- First data analyses: examples showing how far away from the 4-hour door-to-door target we are
 - Using optimistic and less optimistic scenarios

One leg travel time



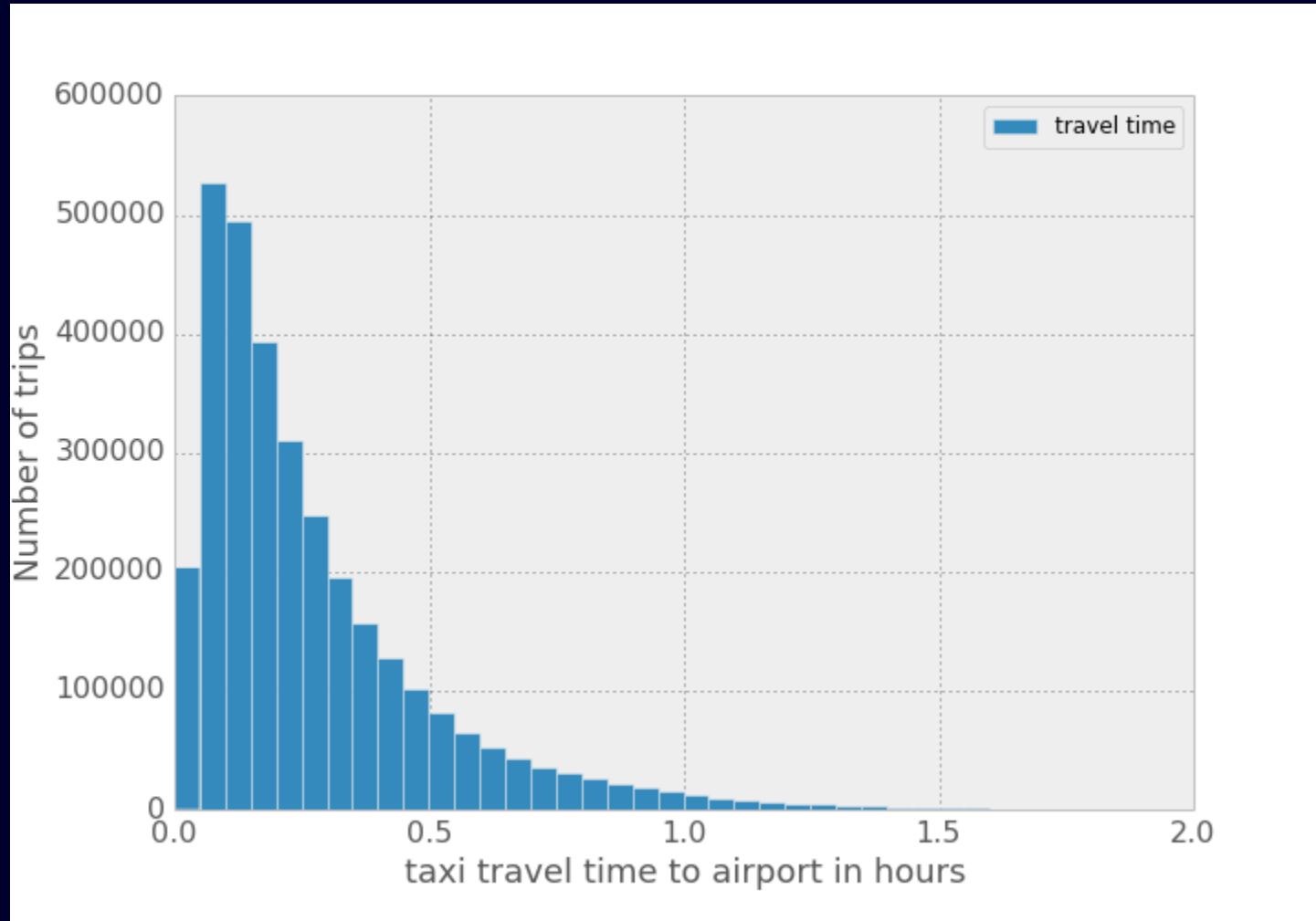
(from 2010 DDR data)

One leg travel time



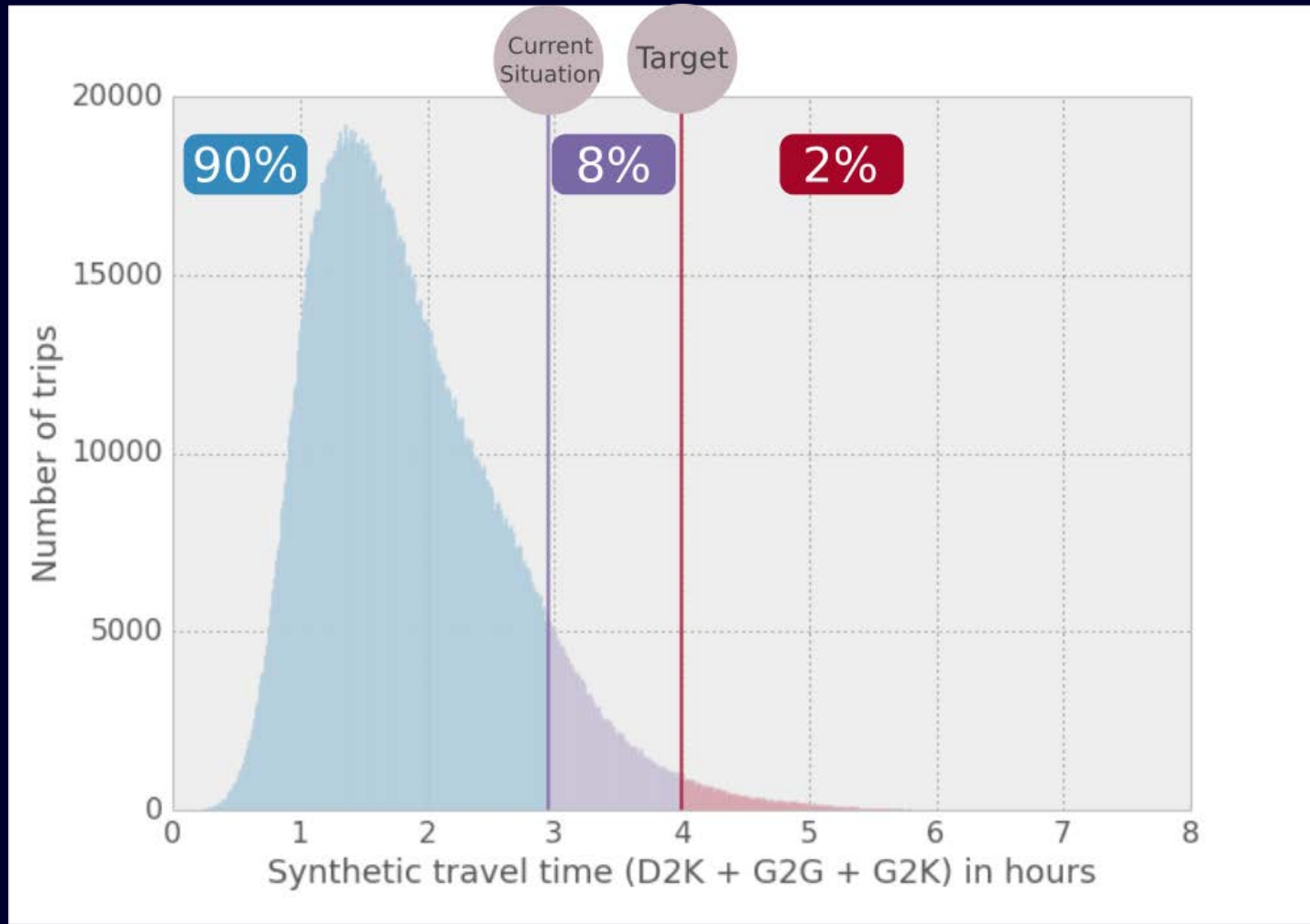
(from 2010 DDR data, one month of data)

Taxi travel time



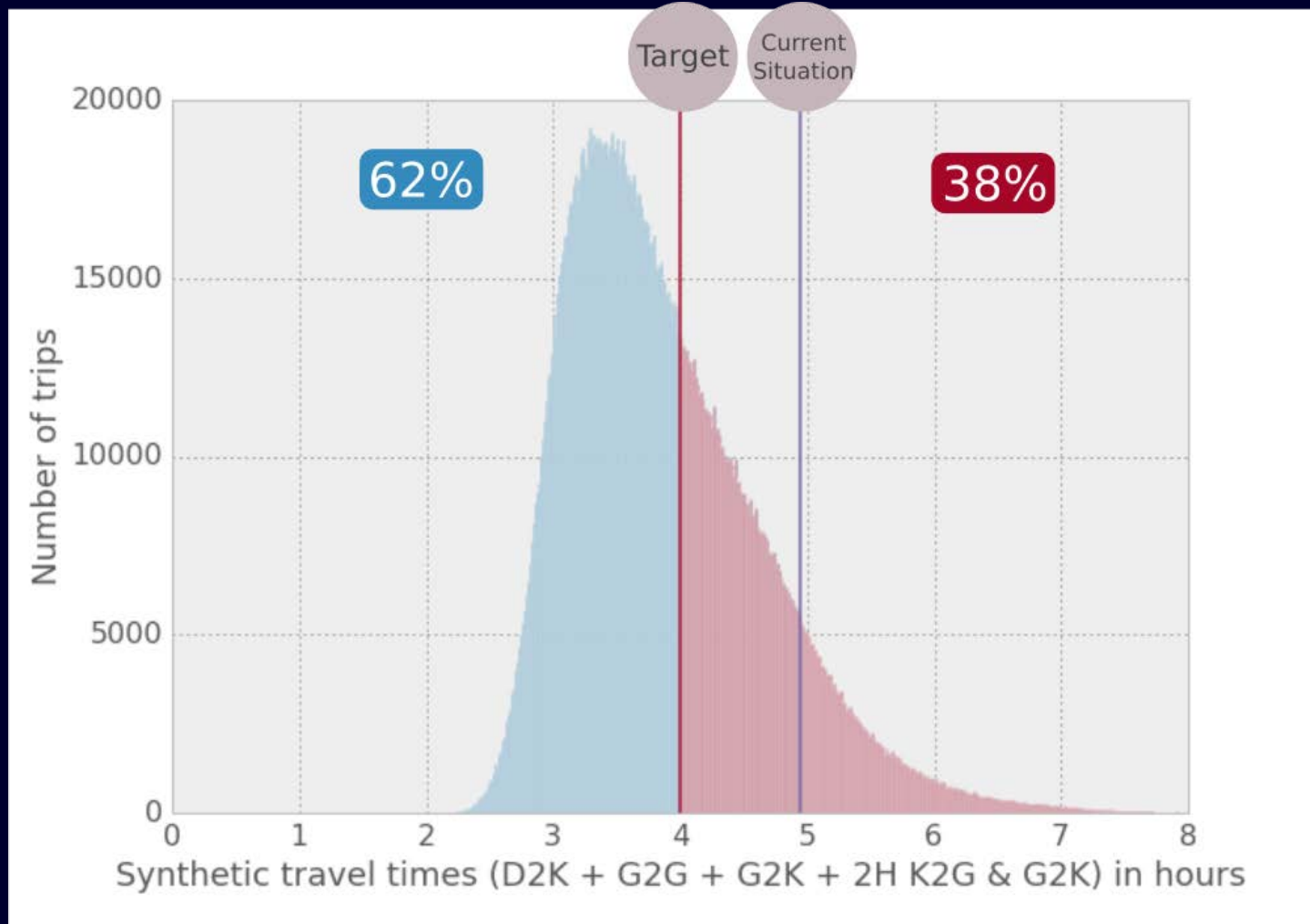
(from 2015 taxi data for NY, USA)

(Very) optimistic travel time without airport



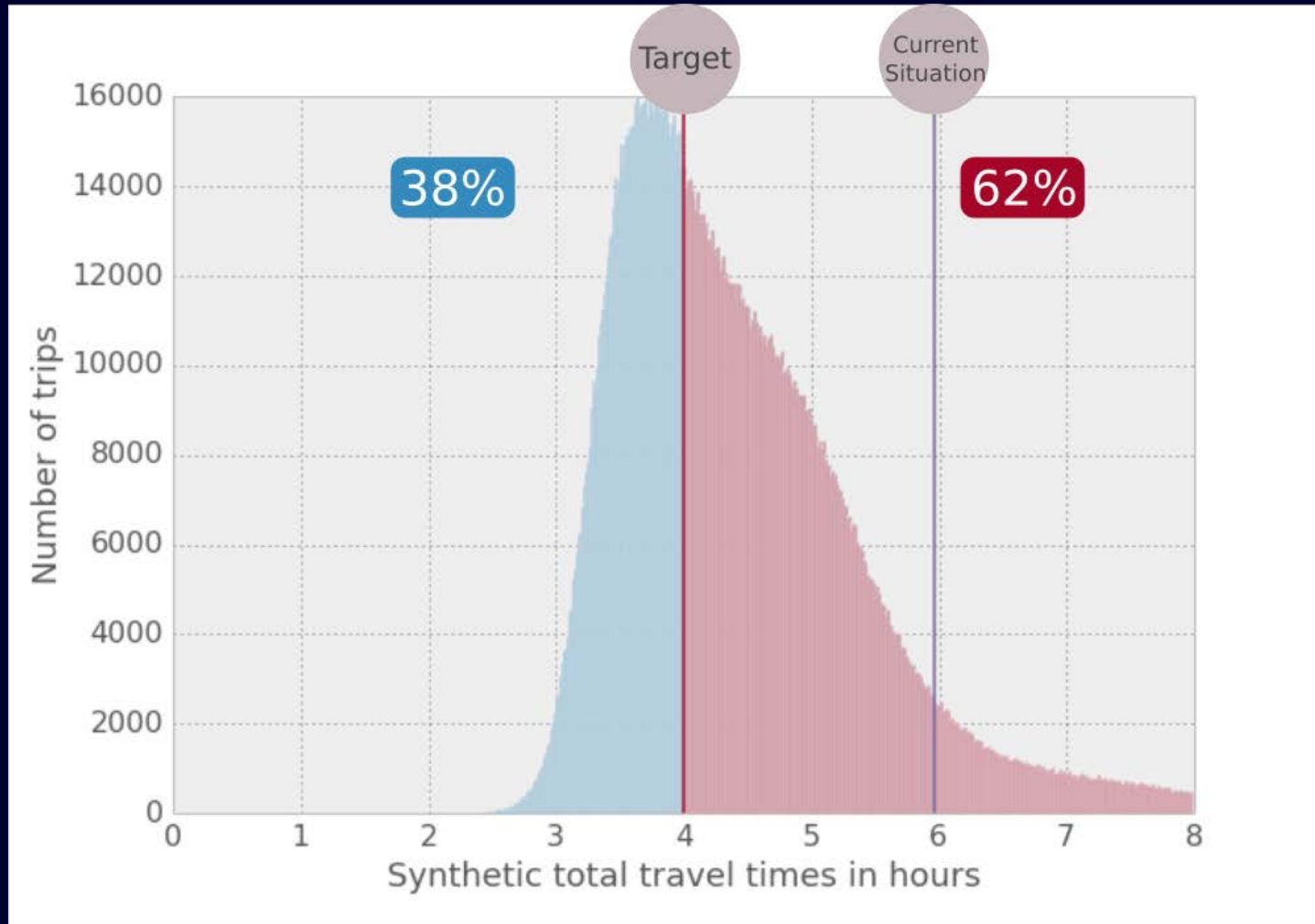
(from taxi and DDR data)

(Very) optimistic total travel times



(from taxi and DDR data)

(Slightly more) realistic multi-legs travel times



(from passenger data plus taxi data)

Achievable?

Not taken into account:

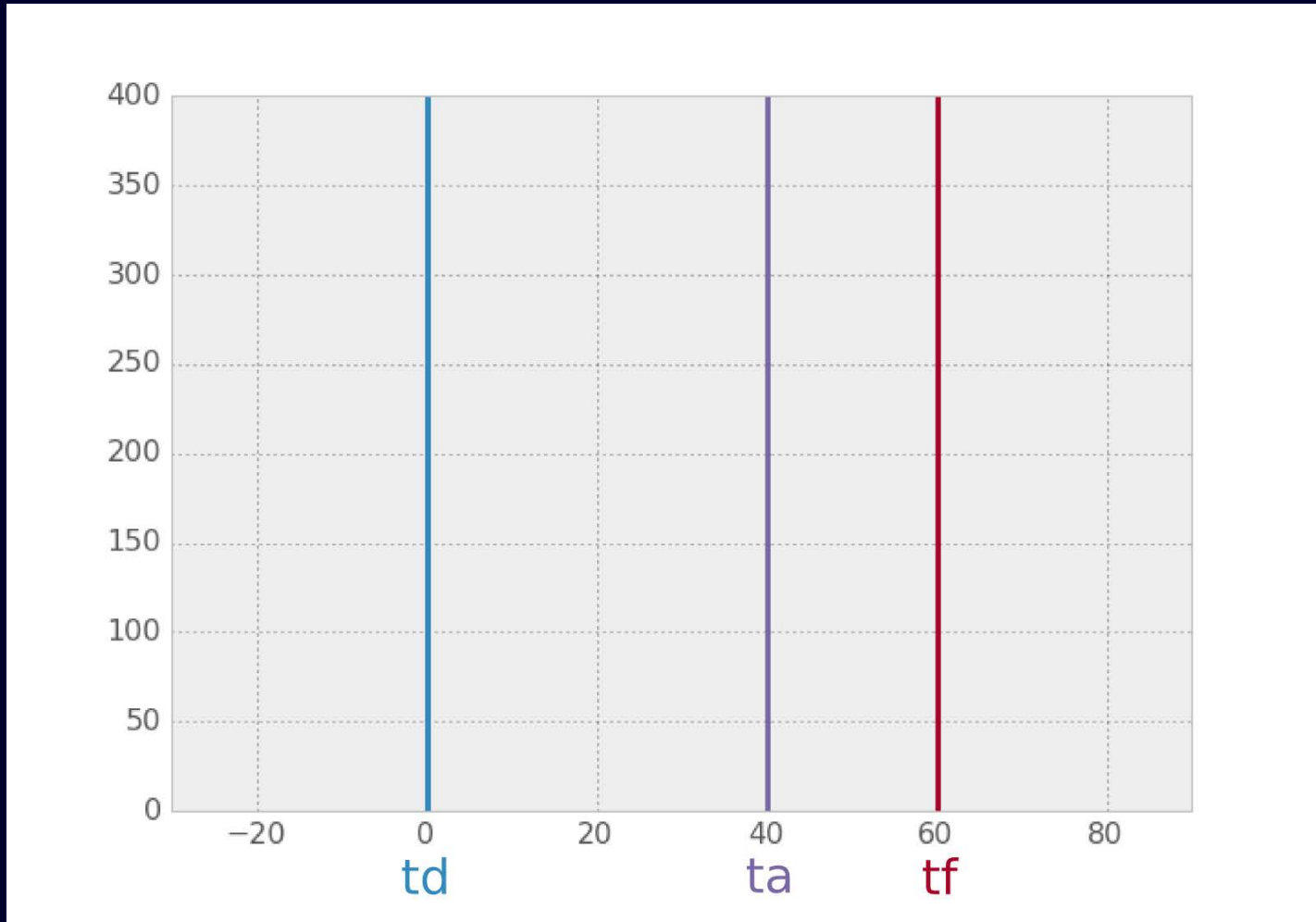
- Buffers
- Other means of transportation to airport
- Incidents etc.

There is **a lot** to do!

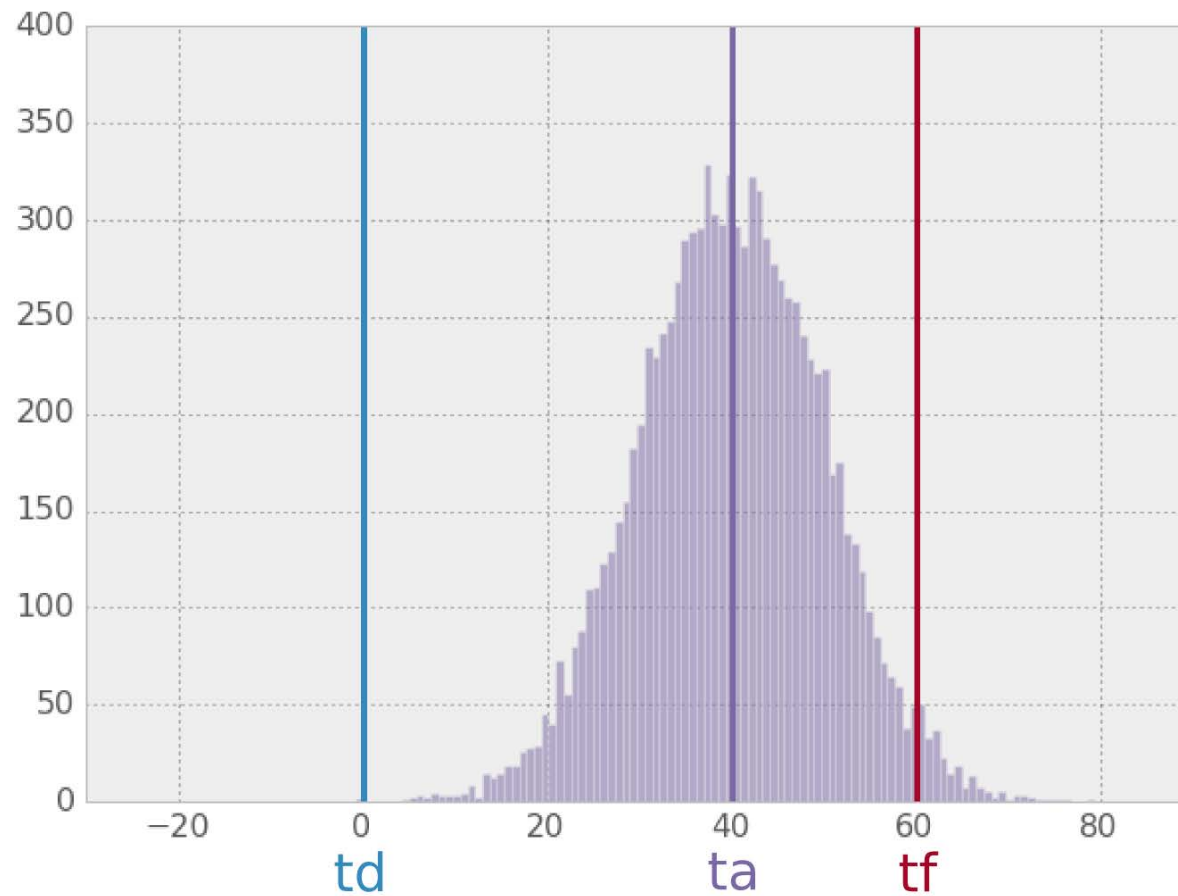
Good news:

- There is a lot to improve in each leg,
- There is a lot to improve at the interface of each leg.
- EU is shrinking, so distances are shorter ☺ !

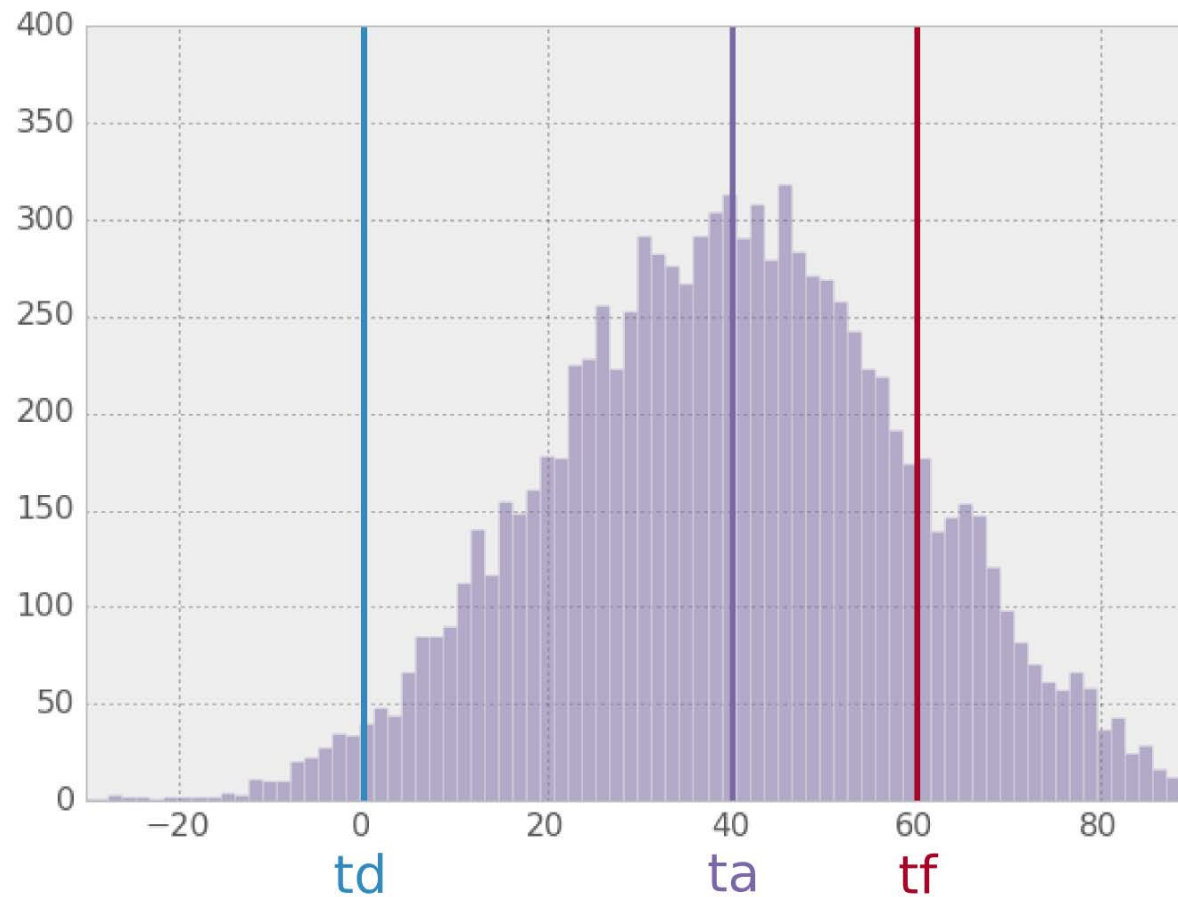
Buffers and uncertainty



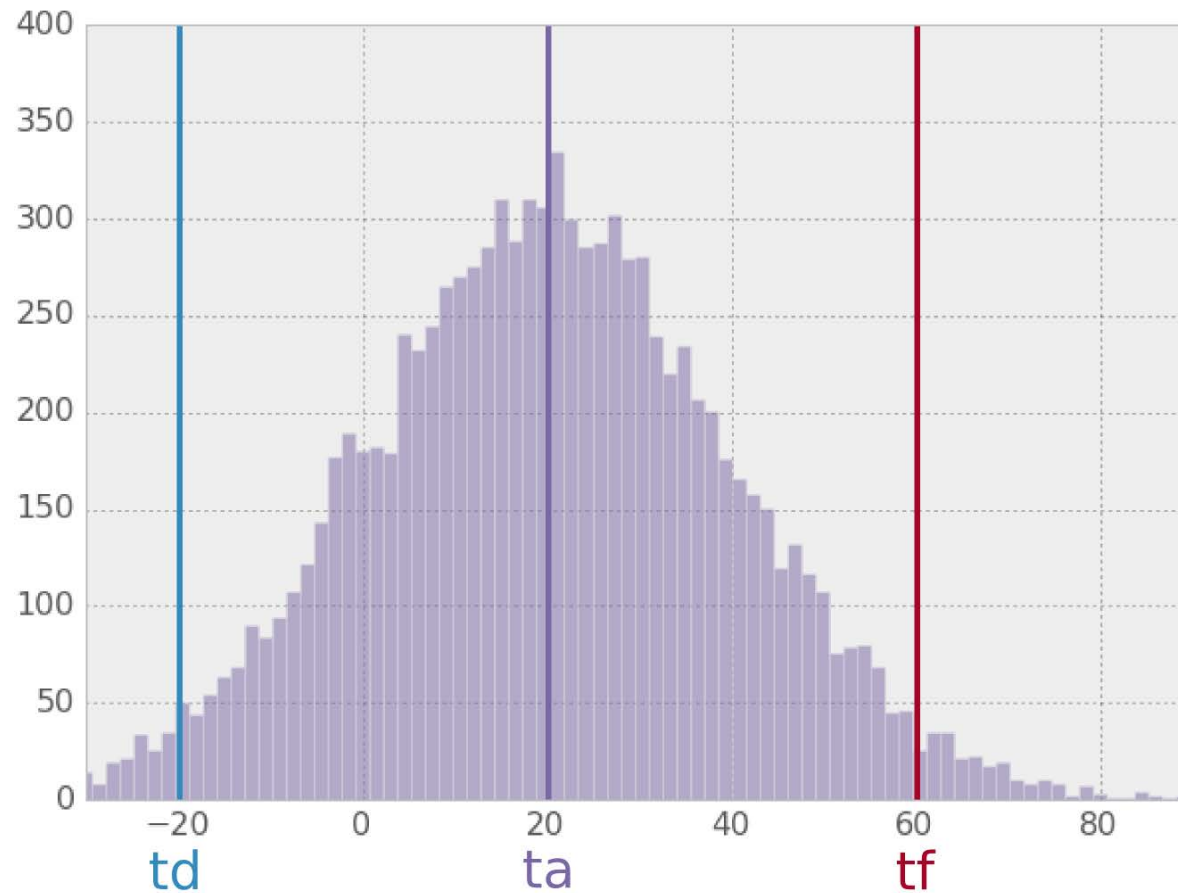
Buffers and uncertainty



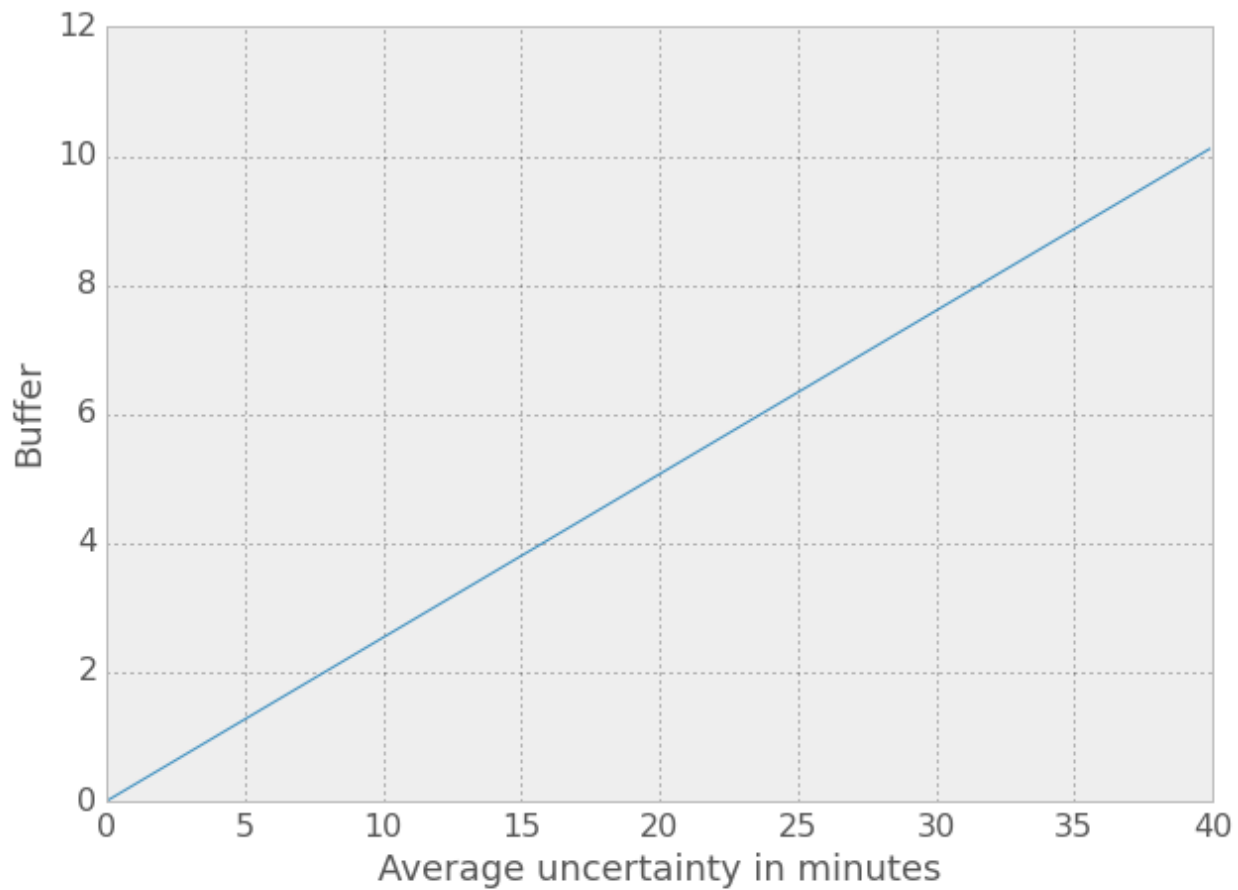
Buffers and uncertainty



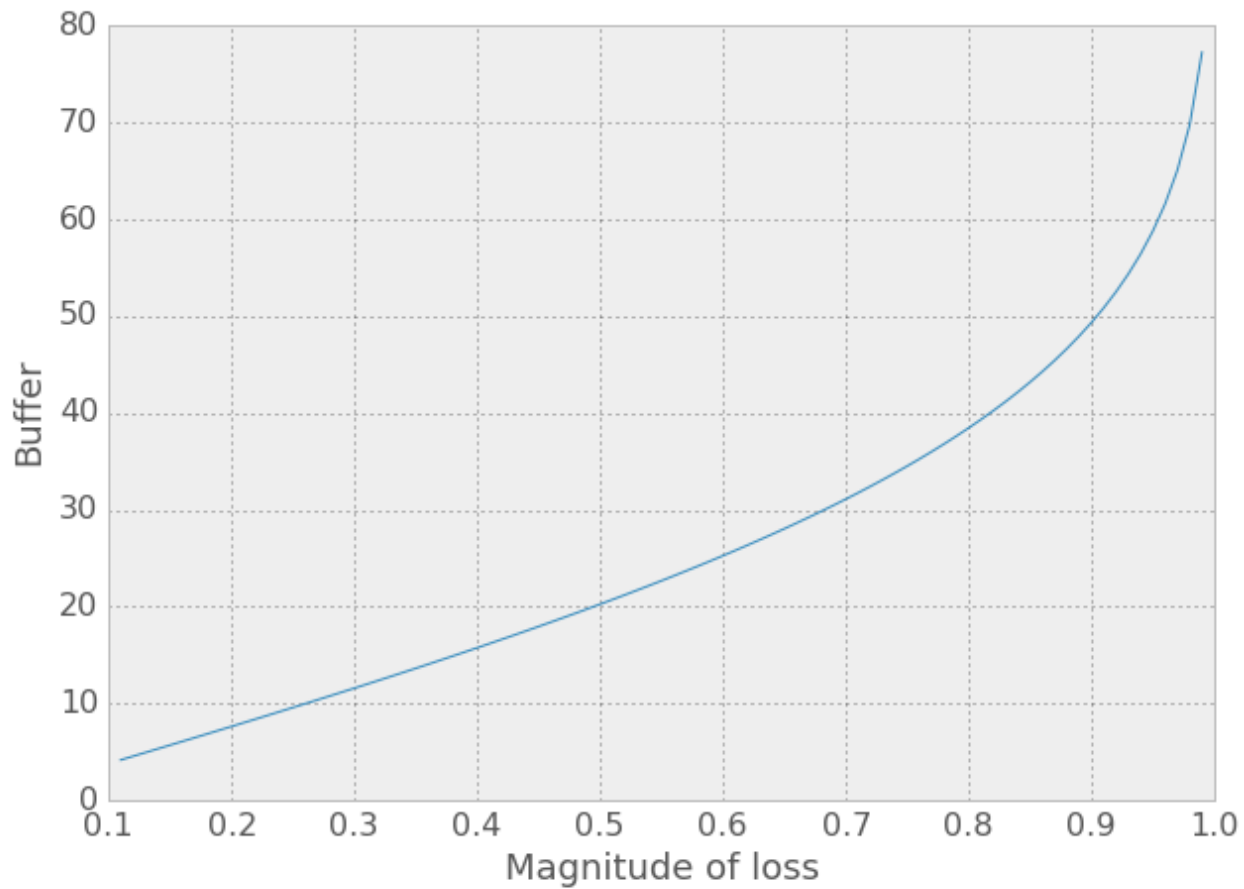
Buffers and uncertainty



Buffers and supply



Buffers and demand



Conclusion

- Buffers come from the reaction to uncertainty
- Buffers depend on the demand side (utility)
- Buffers depend on the supply side (uncertainty)

Different sources, different reactions:

- Uncertainty of passengers
- Uncertainty of airlines
- Uncertainty of airports
- ...

Problem of data sharing, data acquisition, etc.