Telefónica

ANONYMIZATION - THE KEY TO USE MOBILE PHONE DATA

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OVERLINE

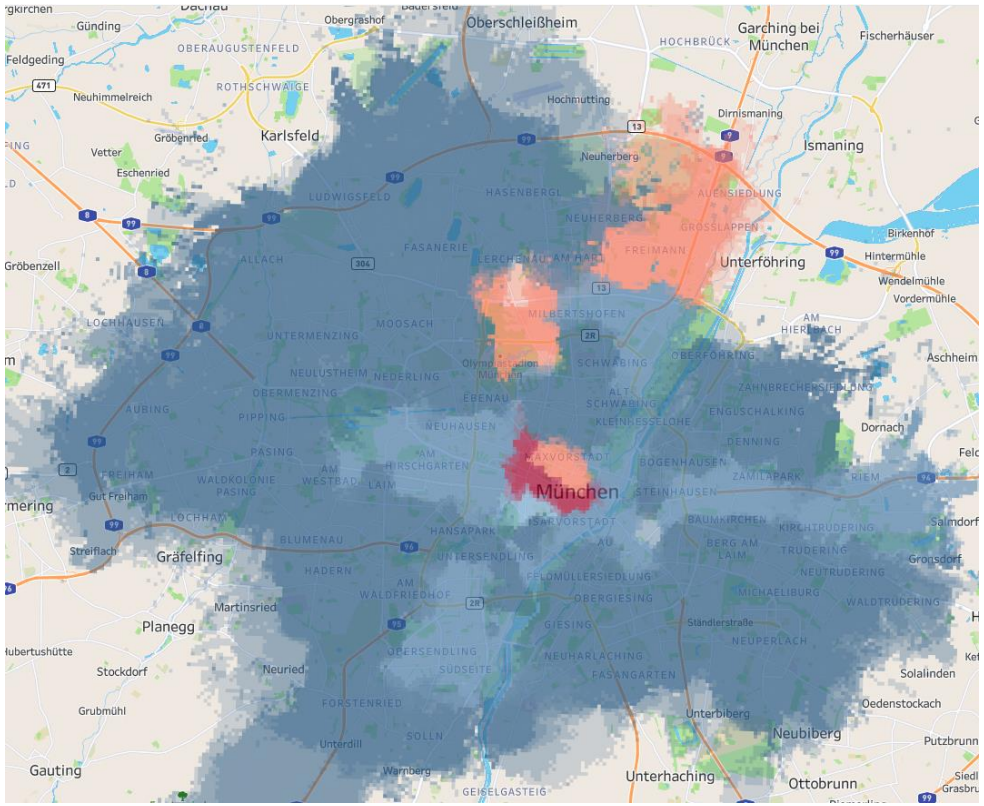
The Challenge of Anonymizing Mobile Signaling Data

The mobile phone data of a mobile network provides valuable insights into population movement patterns. Friction free. Means: no app / no active action of the mobile phone user is necessary to provide localization data.

Challenge if we want to use this data:

The data must be anonymized in order to guarantee data protection for each customer. At the same time, the information value of the data should be preserved as far as possible.

Otherwise, the analysis results are not statistically relevant enough.



Density of Scottish football fans on the day of the European Championship match against Germany in Munich.

Legal Framework: GDPR vs Country-Specific Differences

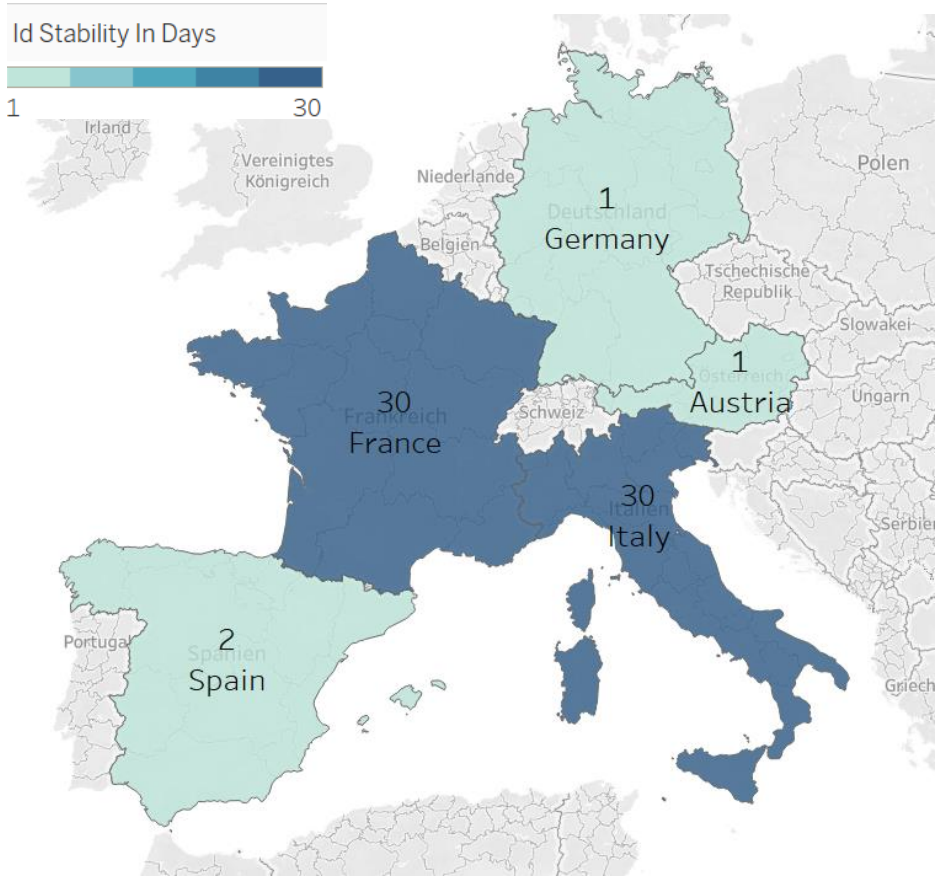
GDPR in Europe:

The General Data Protection Regulation (GDPR) governs the handling of personal data throughout the EU.

Nevertheless, the requirements for anonymization are interpreted differently from country to country.

Examples:

- In Germany and Austria, the requirements are very strict and an identifier for a mobile phone must be renewed at least every 24 hours.
- France and Italy: 30 days ID stability.
- In Spain, an identifier may remain unchanged for up to 48 hours.



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Telefónica’s Data Anonymization Platform (DAP)

Telefonica developed an anonymization platform (DAP), which guarantees data protection for the customer and still retains the greatest possible use of the data for analysis purposes.

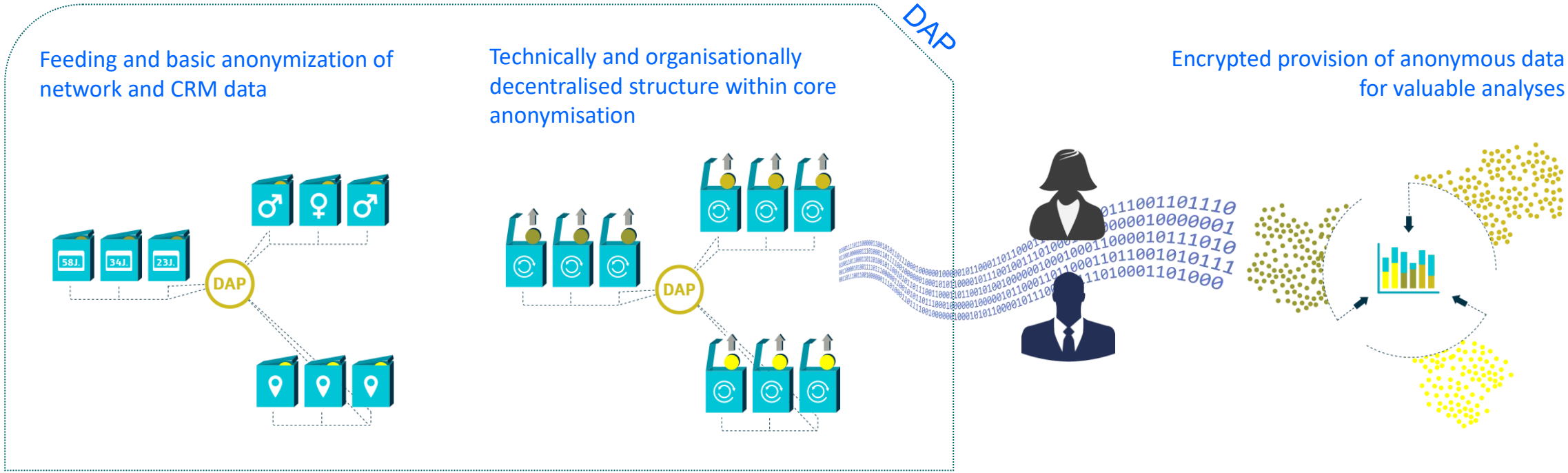
The DAP can process different ID stabilities. The stability is currently set to 24 hours. If the requirements for anonymization change, we can act flexibly and extend the stability, for example.

In this way, movement patterns and trends can be mapped in a statistically significant way, for example to support transport planning or the understanding of the mobility behavior of the population in general for various purposes.

We can also process several data streams in parallel, with different ID stabilities and thus, for example, process data from another network operator according to its requirements for ID stability.

DAP Framework

Development in close coordination with the Federal Commissioner for Data Protection and Freedom of Information (BfDI). Framework is **patended**.

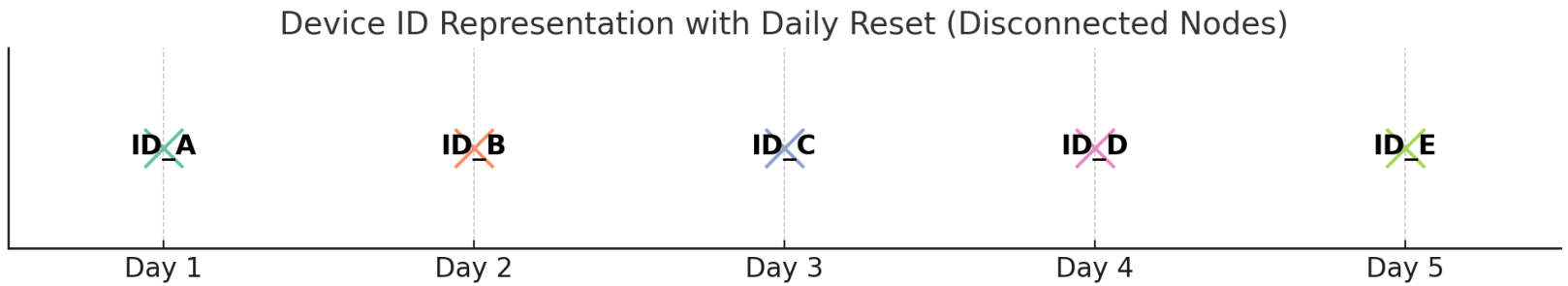


Problem: 24h ID stability

By analyzing the anonymized data over a period of 24 hours, many insights can already be gained about the movement behavior of the population.

But, due to the short ID stability of only 24 hours, it is not possible for an analyst to identify the same device on other days.

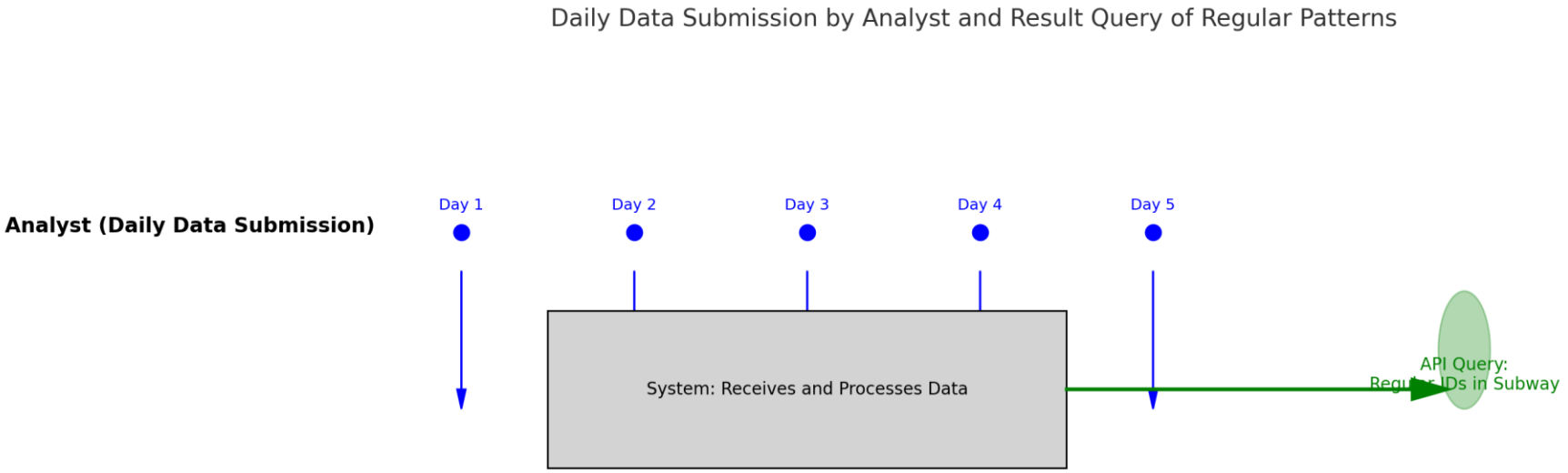
This means that long-term statements are not possible.



Solution: DAP LTI‘s

Thanks to the **patented DAP**, we have a solution for creating long-term statistics. The **Long-Term Indices**.

Despite the only day-based view of devices in the data, the **DAP allows an anonymous view of cross-day behavior**.



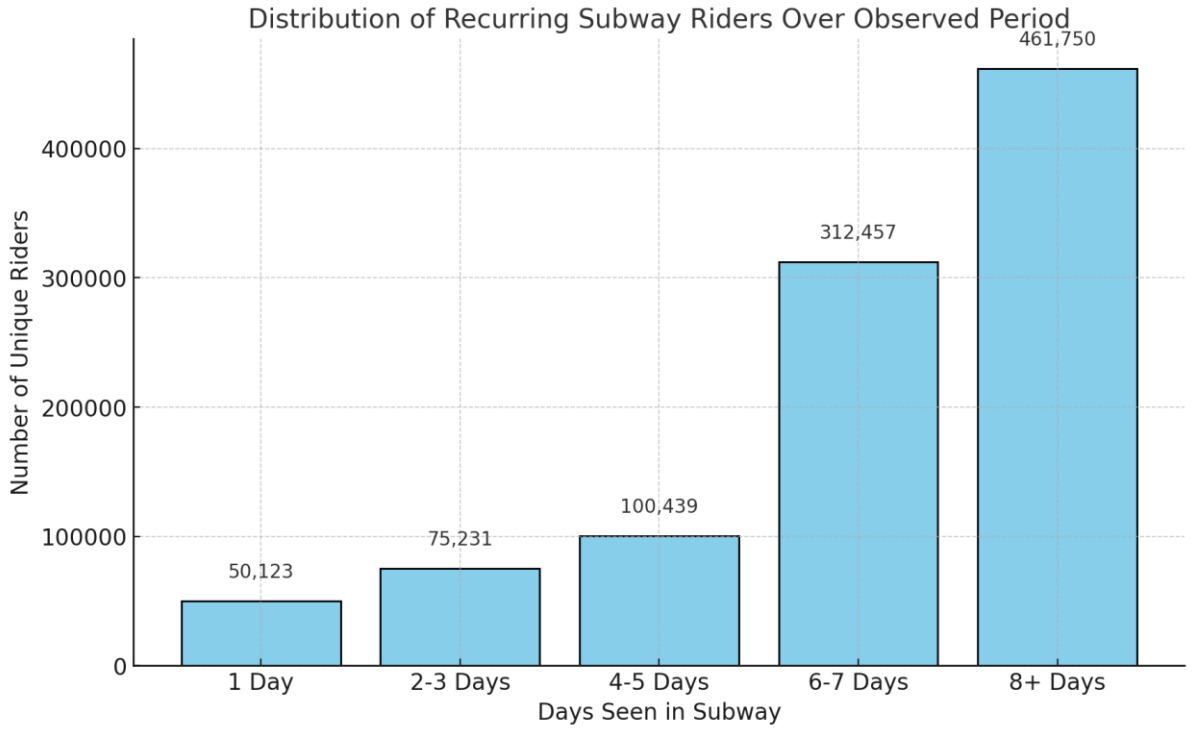
Example: recurring use of a subway

Question of a public transport operator:

How often do my customers use the subway in time period x?

An analyst is able to answer this question with the help of the DAP!

Nevertheless, the ID stability is only 24 hours and absolute anonymity is guaranteed.



Other examples

Cross-day analysis by using DAP LTIs

- Know the real home or work location (e.g. most visible zip code per ID/day at a certain timeframe) without having to take the customer's details from the contract.
- Recognise commuters on defined routes or means of transport.
- Identify all the points of interest visited by the same tourists during their n-day stay in the city.
- In which neighborhoods do students spend their evenings (keyword: gentrification)?

- … and much more is possible

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IT‘S NOT A TRICK, IT‘S THE DAP

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Stay in contact!

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