



Management of an automated passenger counting system

Database for managing an automated passenger counting system

PTV AG has implemented a system managing the use of an automated counting system for Munich's public transport operator called MVG Munich. The system also edits and evaluates the surveyed trips.

Client: MVG Munich - Munich's public transport operator (Münchner Verkehrsgesellschaft)

Project: Database for managing an automated passenger counting system

Infoline: Public Transport Software + Survey Department, peter.mott@ptv.de

poor data quality or differing data records can be checked manually and gradually integrated into the process. Protocols consist of number and type of counted as well as automatically or manually deleted or confirmed vehicle trips. The matching process with the original counting program determines deviations and, if required, repeated surveys.

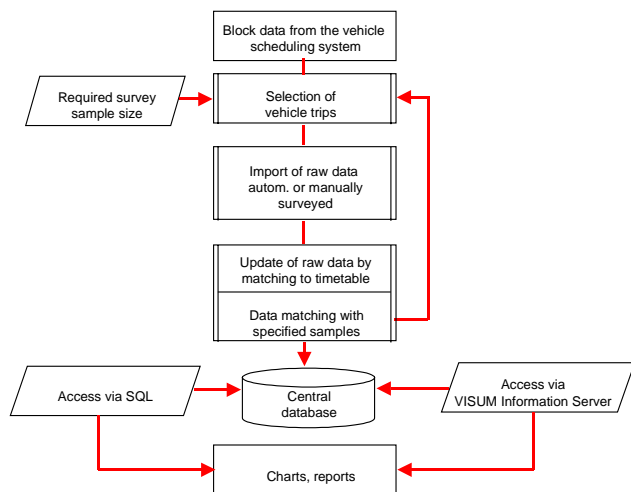
Demand and supply data used during data processing as well as protocol information flow into a relational database system building the basis for OLAP (Online Analysis and Processing).

The database can be accessed via the VISUM Information Server. Pre-defined user interfaces and the layout of the web site used for entering queries can largely be adjusted to the user's requirements. The authorised user must enter his code and password. The administrator manages the user profiles, thus controlling possible queries or displays assigned to each user or user group.

Query results can be displayed in the browser in the form of tables or standard business charts, e.g. time graphs. The VISUM software allows the user to visualise the results within the network as thematic maps, e.g. columns for each stop, or bars displaying the volume per route. The system provides time-, cross section- or line-related evaluations.

In addition to count data, the system imports the actual departure times for each stop. It is therefore possible to evaluate the services in terms of punctuality and quality. All results and their impact on the entire network can be presented in graphical formats.

The following diagram illustrates the main steps:



Surveyed trips within one survey period are selected on the basis of block data resulting from the vehicle scheduling system. The required trips are determined according to a defined number of samples and converted into a count and survey plan. All vehicles equipped with the counting system will be assigned to this plan. It is also possible to add manual count data, if required.

All raw data is then imported from the counting system applying a user-defined external data format. The data is transformed into a source-independent internal logic raw data format. The raw data quality is checked by matching it to the VISUM-based timetable. Inconsistencies between the number of boarding and alighting passengers are corrected by using a balancing algorithm within defined tolerances. Vehicle trips which should not be evaluated due to