Data Collection and Management

Data Storage and Database Management of euroFOT Datasets

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Using Database, why?

Database's features compared to simple logs or excel files offers:

- Huge amount of data handling
- Structured data and stored along its description (meta data)
- Data search using parameterized queries over current or historical data
- Entire related datasets downloading

Challenge: succeed reasonable uploading time of collected FOTs data and overall response time

- *Different implementations exist in euroFOT.*
- *We focus on one of the approaches.*

Data storage

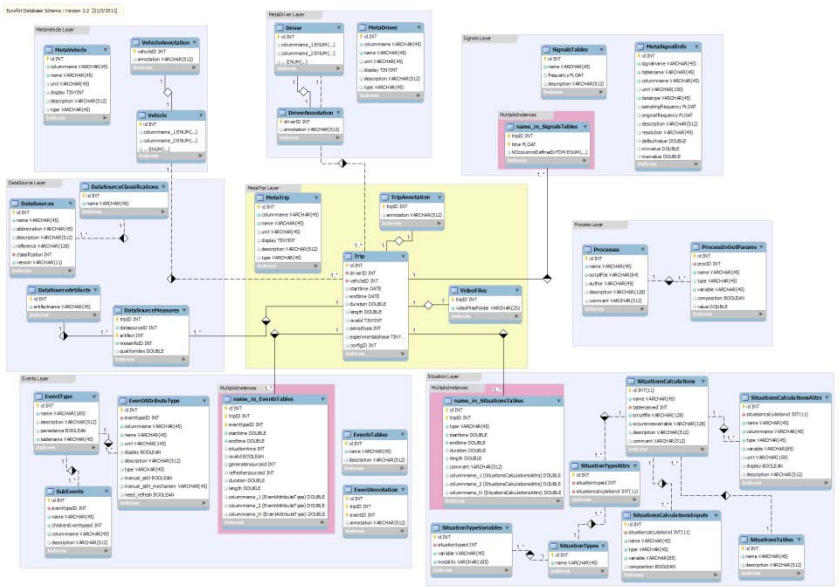
Database stores:

- Original signals
- Derived metrics
- Aggregated data
- Data and process description
- Data processing history

Database contents

Trip-related data:

- Signals & Situational Variables
- Events, situations
- Annotations
- Videos' path reference
- ...



Meta Data:

- Data model and processes description
- Processing management history

Data transfer (1)

The data uploading phase handles two kinds of data:

Meta data

- Corresponds to the trip data model

Trip data

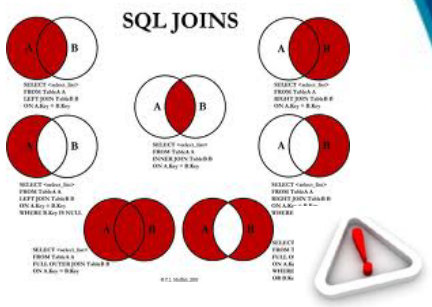
- Corresponds to the original recording data and the derived one during data reduction

Data transfer (2)

During data uploading:

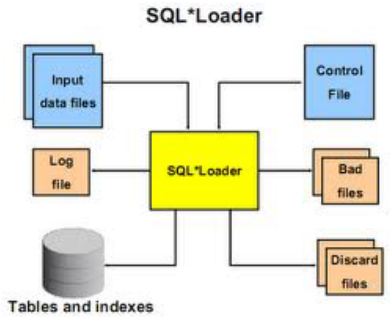
- Transfer matlab structures to database with the SQL interface.
- API library takes care of foreign keys between tables, so no overhead and speed bottleneck
- Perform remote access to the database

Lessons learned



Most important lessons:

- Database powerful ↔ careful structure based on specific needs
- avoid or minimize “joins” between large tables
- Upload/update tables in database with batch uploading tools, i.e. SQL*Loader
- Need for tables with dynamic number of column, i.e. events, handled by the API
- Not all requirements available beforehand



8 Functionalities, 28 Partners, 1000 Vehicles

1 Field Operational Test, **8 Functionalities**

28 Partners, 1000 Vehicles, 1 Field Operational Test

8 Functionalities, **28 Partners**, 1000 Vehicles

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