Introduction

The purpose of DREAM-AT tool is to provide a technical solution for road safety analysts to aggregate charts from the large sets of causation data when following DREAM (Driving Reliability and Error Analysis Method). Every driver (and other road users) has one coded DREAM chart each, which means that one accident normally has several charts coded. For knowledge of DREAM, see the version of DREAM corresponding to the data in the analysis.

Input data format

In order to aggregate data in DREAM-AT, the users need to export three DREAM tables from the case management system: "node", "element", and "node_type" in comma separated file format (file with "csv" extension). In these tables, there are different labels which may share the same name, for example, "id" exists in three tables indicating node id, element id, and node type id. The logic behind DREAM-AT is:

1. "id" in "*element*" table is the same as the "chart_id" in "*node*" table. Thus, by "*node*" and "*element*" tables, it is easy to find cases and charts belonging to each case. And the nodes (factors) in each chart are stored in "*node*" table.
2. "parent_id" in "*node*" table helps to connect all nodes (factors) in the correct order.
3. For the information of each node, one can check "*node_type*" table by the "type_id" in "*node*" table which is as same as the "id" in "*node_type*" table.

The tool requires these three "csv" files with the following headers:

- Node file (example file is 'nodesYear1.csv'):
    - id|comment|modulename|x|y|chart_id|data_id|subtype_id|type_id|parent_id|uid
    - The nodes in the Node file have to be ordered such that all parent nodes (phenotypes) from all charts are on top of the file (list) and all the other nodes are sorted below the parent nodes.
- Element file (example file is 'elementYear1.csv'):
    - id|uid|traveled_lane|element_type|string_label|rollover_reconstruction_id| case_id|label|reconstruction_progress
- NodeType file (example file is 'nodes_type.csv'):
    - id|code|description|name|parentnode_id|category_id|uid|order|discriminator

The file's name is not important as long as there are 3 files with extension "csv" in the above format.

How to start using DREAM-AT

1. Click **"File" -> "New Chart"**, and choose the three files to import, Figure 1.
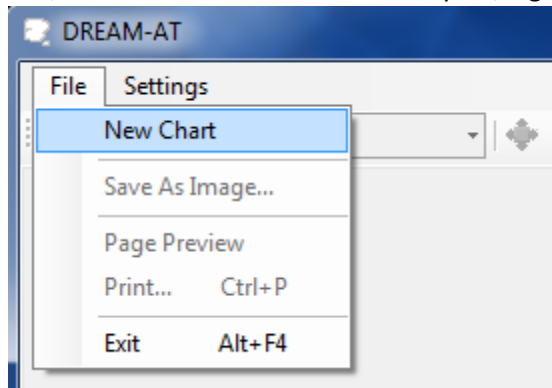

Figure 1: Choose input files

2. Click the drop-down menu and a list of charts appear which are named according to the chart id's and the phenotypes, for example "1045075 - A1: Timing", Figure 2.
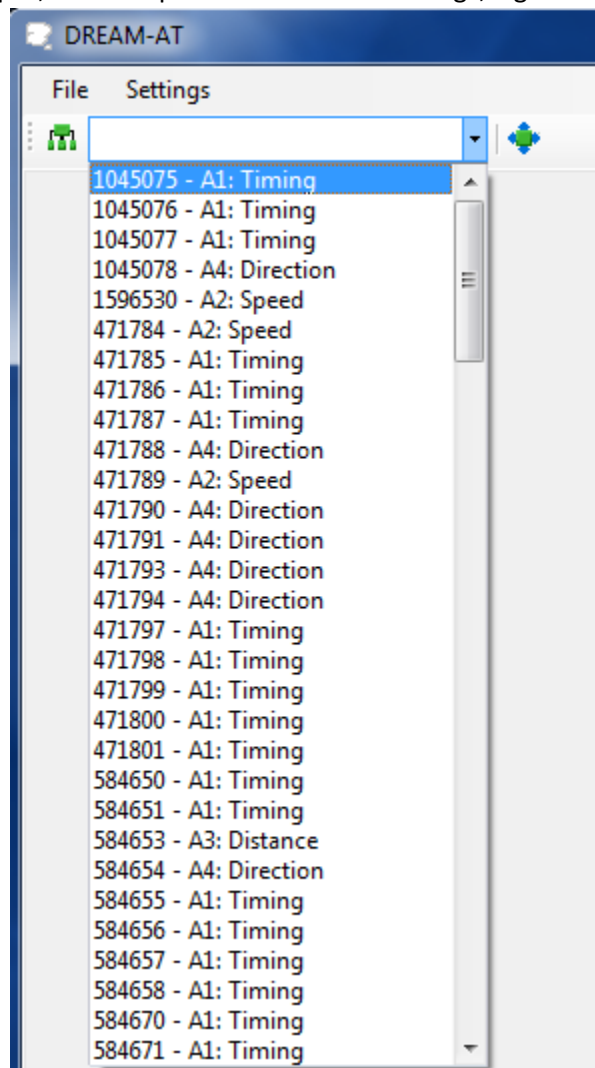

Figure 2: Selection of charts

3. Click on "**Generate Aggregated Chart**" button: to generate charts. The "Aggregated DREAM Chart" form appears, as in Figure 3:
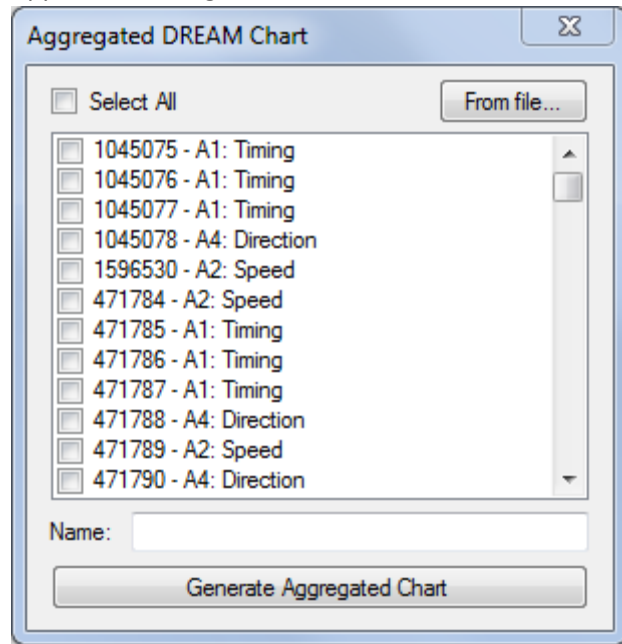

Figure 3: Generate Aggregated Chart

After entering a **Name** for aggregated chart, the user can choose charts to generate from the list. If you want to filter the charts before aggregating, click "**From file…**" button to choose filtered file. In this case, the filter file is exported from the case management system to help users to choose desired charts/case depending on the specific elements like weather, road situation. The examples of filter files are: "CarsYear1.csv", "SingleAccCarsYear1.csv" and "TrucksYear1.csv". These files should have the following header:

   o   case_id|element_id.

4. Aggregated charts will be displayed on the screen, Figure 4. Use the button: to automatically position the selected charts.
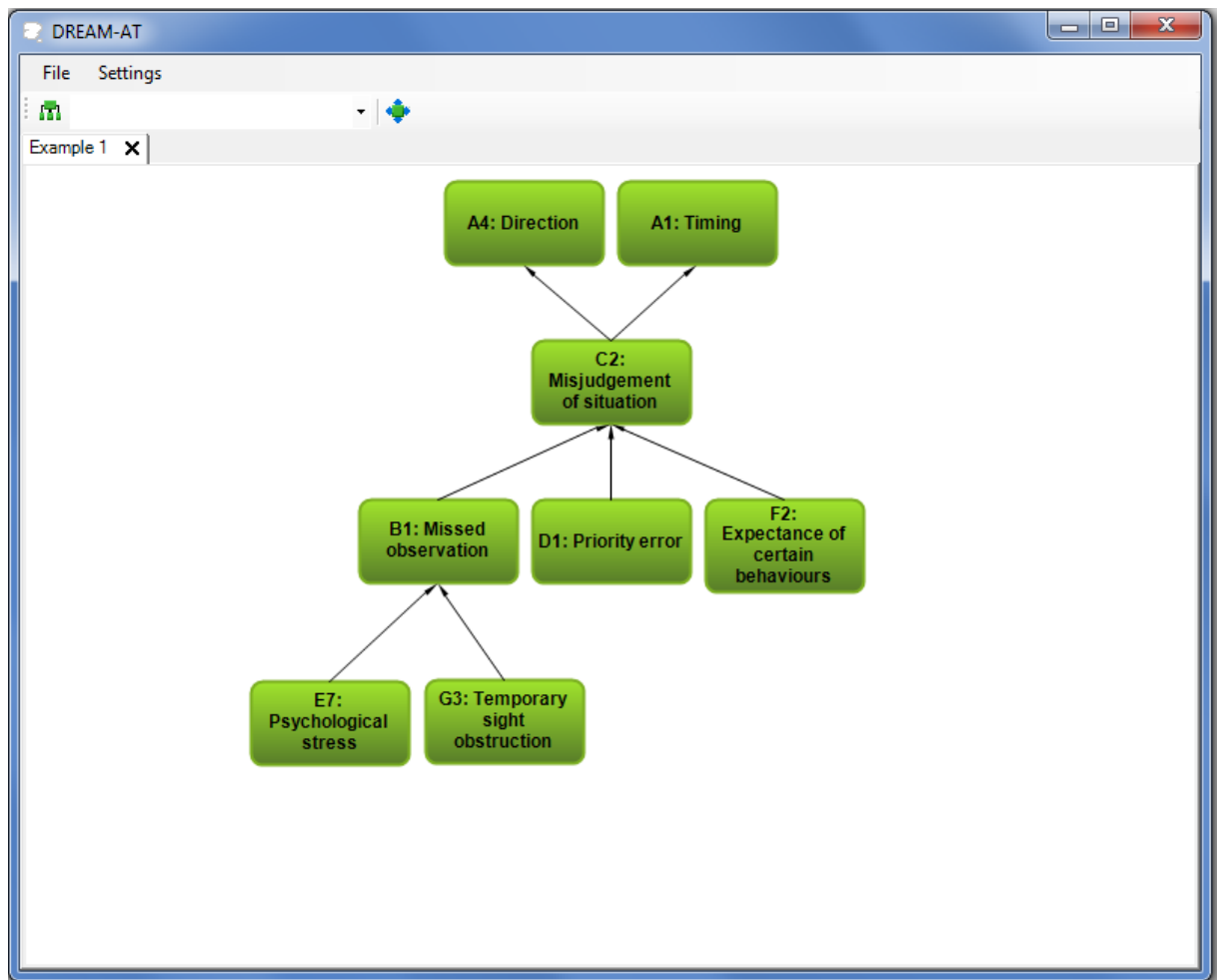
Figure 4: Example of aggregated charts

5. By choosing: "**Settings" –> "Configure**", Figure 5, the user can configure the layout, Figure 6, and the content of nodes, Figure 7. On the "**Layout**" tab, the user has possibility to change the appearance of the chart. On the "**Content**" tab, the user can choose to display for example "Node id" and "Comment" for the nodes, which is useful for a single chart.
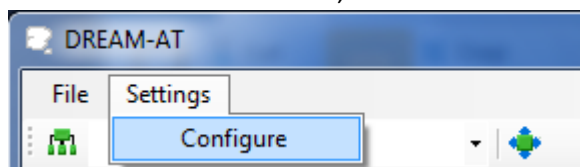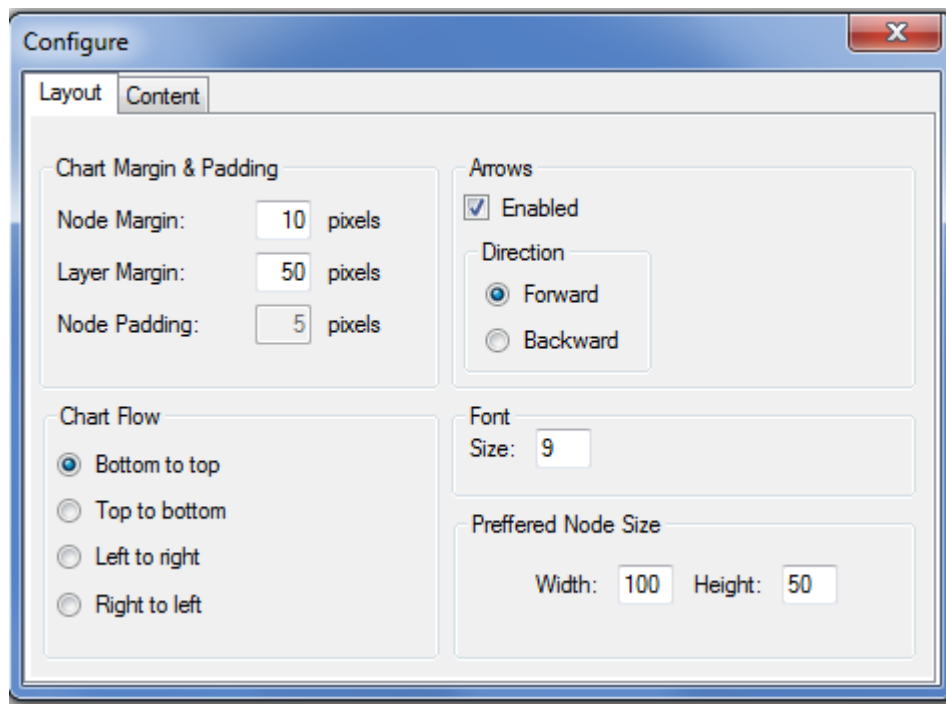

Figure 5: Settings

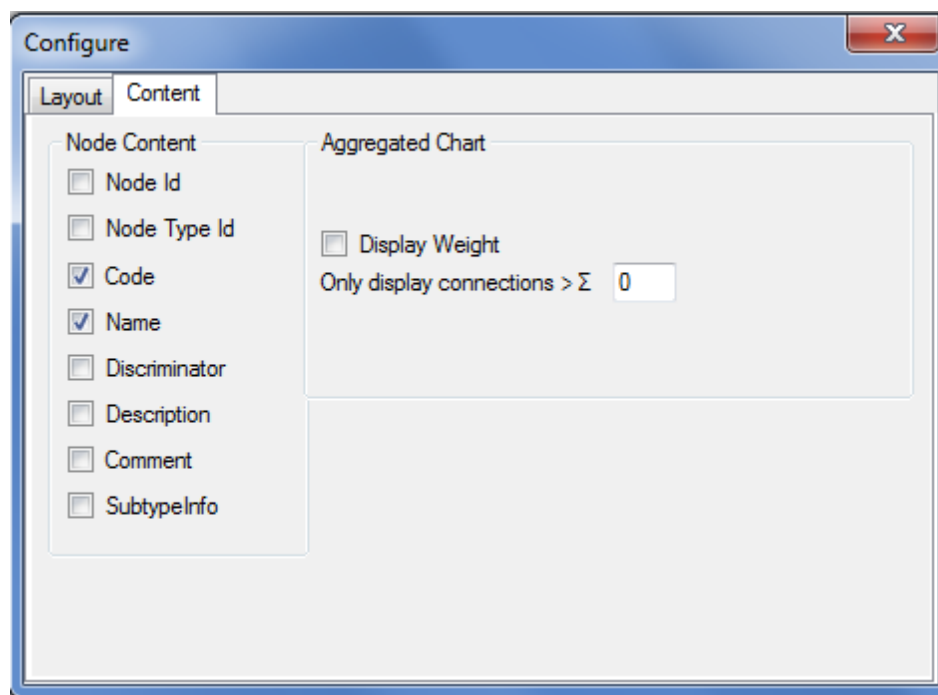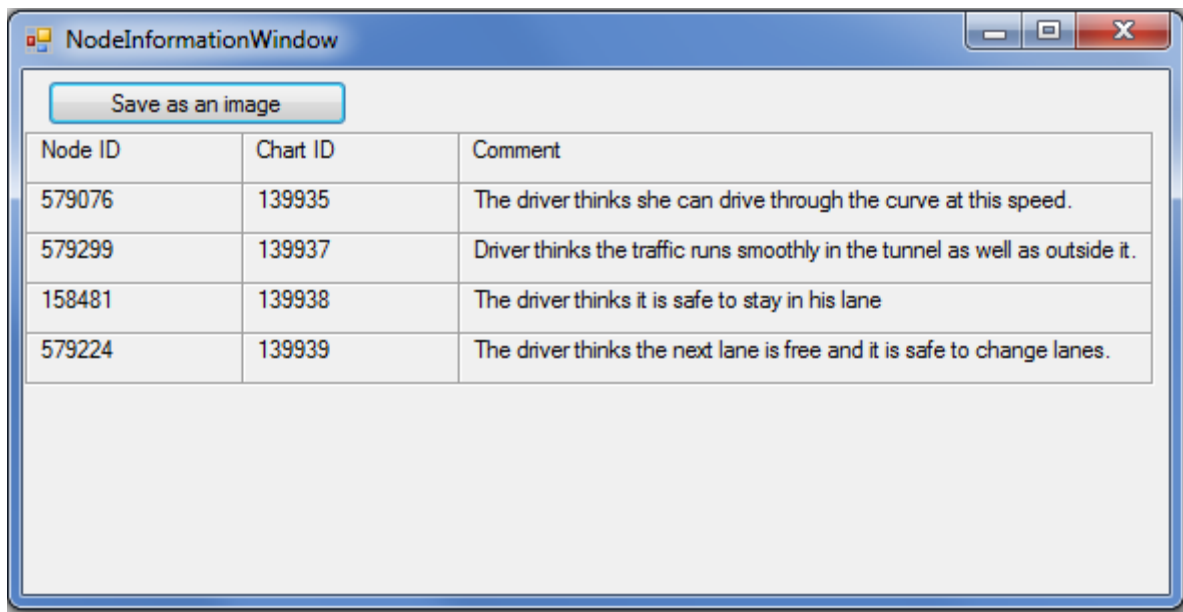*Figure 6: Configuration - Layout*

Figure 7: Configuration - Content

6. When charts are aggregated, the information on each node box are only for the first node appearing during the aggregation. For information on all aggregated nodes, the user can double click the node box, it will display a list of all nodes and the comments, e.g. "node id", "chart id" and "node comment", Figure 8.

Figure 8: Nodes' information.

Limits

DREAM-AT only allows users to import three csv files for aggregating new charts. In order to aggregate charts, users should guarantee the imported files share the same structure (especially headers) as the tables from case management system. This applies to the filter file too.