

Inter-modal Transalpine www.truckinfo.ch System

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Abstract

Truckinfo is a transalpine inter-modal information portal for HGV traffic in Switzerland, established after the catastrophic fire in the Gotthard road tunnel. The portal provides information on the current traffic situation, taking special account of reports which are relevant for HGV traffic. Alternatives to transport by road are shown through the inter-modal crossborder route planner and the display indicating the availability of space on the piggyback road-rail service.

Keywords

Traffic Information – HGV Traffic – Inter-modal Routing– 4th Swiss Transport Research Conference – STRC 2004 – Monte Verità

1. Background and presentation of the problem

Since the Gotthard road tunnel was opened in 1980, the volume of transalpine HGV traffic has doubled. This remarkable increase meant that there was a compelling need for transit traffic to be switched from the roads to the more environmentally friendly railways.

For many years Swiss transport policy has been directed towards reducing transalpine transit traffic, in accordance with the article of the Constitution dedicated to the protection of the Alps. Though the adoption of this article by the Swiss parliament sparked off a confrontation with the European Union, the differences between the two sides were gradually whittled down in the ensuing negotiation process. The realisation that transalpine transit traffic could not simply be allowed to grow unchecked undoubtedly contributed to this outcome and a compromise was finally reached with the EU through bilateral negotiations and agreements. This solution requires Switzerland to increase its weight limits for road traffic gradually until 2005 so as to bring them into line with EU levels. In return, Switzerland has been allowed to introduce its distance-related heavy traffic fee, which is intended to promote the transfer of traffic transiting through Switzerland from road to rail.

1.1 Fire in the Gotthard road tunnel

On 24 October 2001, there was a catastrophic fire in the Gotthard road tunnel. Following on from the accidents in the Mont Blanc and Tauern tunnels, this was the third in a series of fires occurring in long two-way road tunnels through the Alps. In response to these events, the transport ministers of the Alpine countries, in the presence of an EU delegation, issued a joint declaration on 30 November 2001, proclaiming their intention to reduce the risks arising from the increasing volume of goods traffic on the transalpine roads and to increase safety in the long transalpine road tunnels. At the same time, the ministers, in line with European transport policy, reaffirmed their view that, given the limited capacity of the transalpine roads, all necessary steps needed to be taken into consideration to shift the transport of goods from road to rail so as to minimise the risk of accidents in the long road tunnels in the Alps.

1.2 Measures

Various measures were introduced, such as an improved ventilation system to cope with fires; a ban on overtaking by HGVs, subsequently replaced by a batching system; the necessary waiting and standing zones for HGVs; the separation of heavy traffic into trucks with “S”-plates and other HGV traffic; new road signs; and, last but not least, a powerful new inter-modal transalpine information portal www.truckinfo.ch which has aroused great interest at home and abroad and is in constant use. This portal is presented and described in the following sections.

2. The www.truckinfo.ch information system

2.1 Functions

The portal is designed to meet two objectives: (i) to assist in route planning and the selection of means of transport (combined transport, piggyback rail service) and (ii) to increase the use of alternative routes and rail options when the Gotthard is congested and to influence HGV departure times. The target groups of the portal are freight carriers, transport companies and drivers.

Truckinfo offers

- Information on weather conditions, mountain pass closures, tunnel access roads
- Display of booking status on the piggyback rail service Lugano - Basel, Lugano - Freiburg i.Br. and Novara - Freiburg i.Br., Singen - Milan
- Inter-modal routing tailored to the needs of HGV traffic, indicating alternatives with transfers to rail, suitable average speeds, night-driving bans and waiting times at customs
- Explanations of the "drip feed system" and the timetable for the San Bernardino Tunnel (and the Gotthard road tunnel)
- Space for warnings and recommendations for HGV traffic (e.g. customs strikes, public holidays in neighbouring countries)
- All information is available in German, French, Italian and English.

2.2 Course of the project and adjustments needed

As the external environment kept changing during the implementation of the project, Truckinfo had to be adapted to meet the new conditions. The following table indicates the chronology and the external events affecting the Truckinfo project.

Table 1 Overview of project chronology:

| Date | External event | Truckinfo Project |
|------------|---|--|
| 24.10.2001 | Gotthard road tunnel fire | |
| 12.11.2001 | | Invitation to tender |
| 16.11.2001 | | Bids received |
| 12.12.2001 | | Award of contract |
| 22.12.2001 | Re-opening of the Gotthard tunnel with overtaking ban for HGVs and three-hour alternation intervals | |
| 04.01.2002 | | Tender for operation and supply of traffic information |
| 01.03.2002 | Information on "Red phase" | Start of traffic information |
| 01.04.2002 | | Start of inter-modal route planning |
| 06.05.2002 | Switch to two-hour intervals on the Gotthard tunnel | |
| 02.07.2002 | | Press release on Truckinfo |
| Sept. 2002 | Introduction of the drip feed system on the Gotthard | |

2.3 Traffic information and information flow

The traffic information is presented on a map with symbols. When the cursor is placed on the symbol, the text of the message is displayed. The reports are also available in table form.

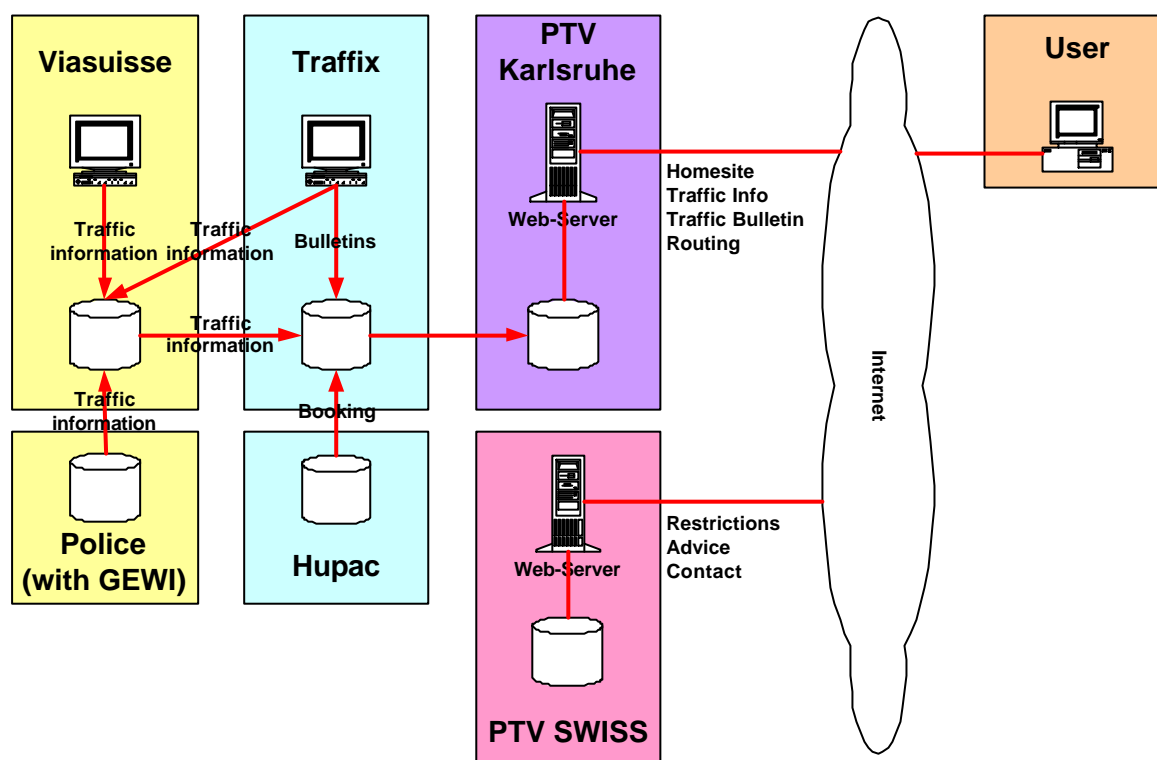
Figure 1 Map with traffic information



Source: PTV Swiss, www.truckinfo.ch

The traffic information is gathered by the police services, Viasuisse and Traffix. It is then bundled by Traffix and transmitted to PTV. Information on weather conditions and pass closures is transmitted to PTV, together with information from Hupac on the status of bookings for the piggyback train services. The information is then processed at PTV and made accessible via webservers. The following diagram provides a simplified description of the information flow.

Figure 2 Information flow







Source: PTV Swiss

2.4 Inter-modal routing

The following example serves to illustrate inter-modal route planning. A consignment is to be sent from Karlsruhe to Milan overnight. As night driving is prohibited in Switzerland, a switch to rail offers attractive alternatives.

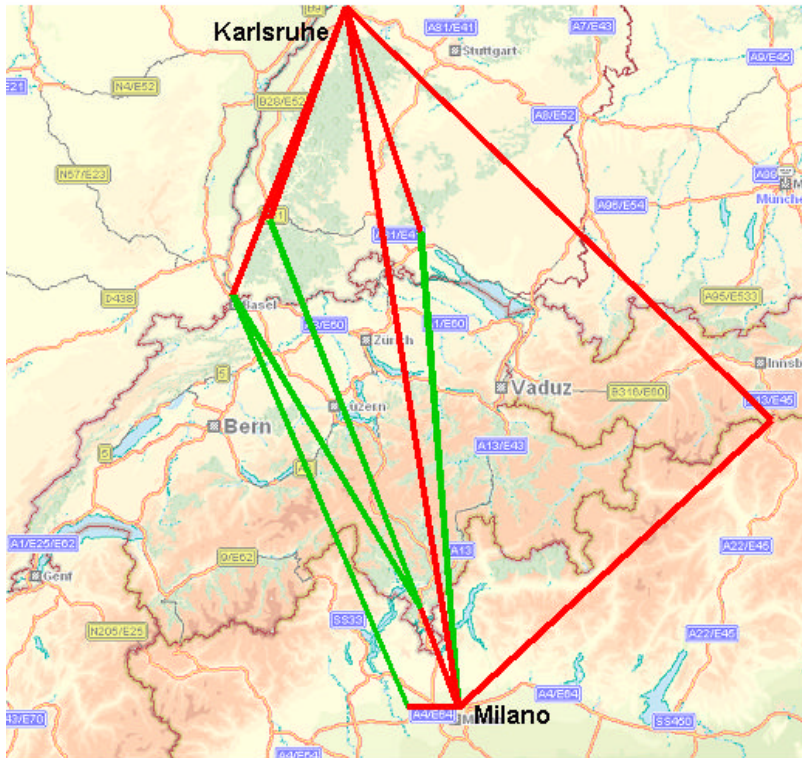
Figure 3 Routing suggestion from Truckinfo

| Connections | | | | | | | |
|---|-----------|----------------|------------------------|-------------------|-----------------------------|----------|---|
| Start: D-76131 Karlsruhe | | | | | | | |
| Destination: I-20096 Milano San Felice | | | | | | | |
| Departure | Start | Loading | Target railway station | Destination | Arrival | Duration | Details |
| 07.01.2004 17:15 o'clock | Karlsruhe | Singen | Milano Greco Pirelli | Milano San Felice | 08.01.2004 06:15 o'clock | 13:00h |  |
| 07.01.2004 17:15 o'clock | Karlsruhe | Freiburg i.Br. | Lugano Veduggio | Milano San Felice | 08.01.2004 07:55 o'clock | 14:40h |  |
| 07.01.2004 17:15 o'clock | Karlsruhe | Freiburg i.Br. | Novara | Milano San Felice | 08.01.2004 08:05 o'clock | 14:50h |  |
| Routing without train transit | | | | | | | |
| 07.01.2004 17:15 o'clock | Karlsruhe | | | Milano San Felice | 08.01.2004 07:30 o'clock | 14:15h |  |

Source: PTV Swiss, www.truckinfo.ch

The following map shows the alternatives available for this routing. The trip without rail transfer (red) can be made through Switzerland or through neighbouring countries. The trains between the loading stations at Basel Kleinhüningen, Freiburg i.Br., Lugano, Milan, Novara and Singen are indicated as alternatives (green) if the time needed is not significantly more than the journey time with rail transfer.

Figure 4 Overview of the alternatives



Source: PTV Swiss

2.5 Users and access rates

It is clear from the figures that the site is accessed much more frequently when the weather is bad or extraordinary circumstances arise. In such cases, the number of users and visits can increase fivefold compared with ordinary working days. On average, the site receives around 200 visits, with about 7 page print-outs per visit. The average visit length is between 30 and 45 minutes. It would appear that there are users who need the traffic information pages on a virtually permanent basis.

As Truckinfo was launched in the form of a pilot project and its continued operation remained uncertain for a long time, no budget was allocated for advertising and great caution was exercised in releasing information on the project.

Approximately 80% of users access the German-language pages. The French, Italian and English versions each have approximately the same number of visitors. As the average visit length is between 30 and 45 minutes, this suggests that some users require almost constant access.

2.6 Current development

The tender for the information platform was based on one year's operation as a pilot project and the existing contract and addendum cannot be extended indefinitely. For Truckinfo to continue, a new adjudication will be needed and the invitation to tender was announced in the Swiss Official Trade Gazette at the beginning of 2004.

3. References

- [1] Balmer, U. (2003) Der Schwerverkehr durch die Alpen ist keine Inselfrage, *strasse und verkehr*, April 2003.
- [2] Gehrken, M. (2003) Mit Tunnel-Bewirtschaftungsmassnahmen Risiken minimieren, *strasse und verkehr*, April 2003.