SAV cooperated with Aosta Valley Authorities for setting a service tunnel of the Aosta Ring Road (side facility of “Cote de Sorreley” tunnel) to be used as a permanent test-field for joint exercises. Through this activity there was an intense cooperation resulting in a self-evident preliminary knowledge of phenomena and procedures.

**LEGEND**

- Undefined
- In process/partly done
- Done

**EU Directive 54/04 Implementation**

- 18 Tunnels
- 13 km
Traffic accidents in ARZ tunnels (last three years)

<table>
<thead>
<tr>
<th>Year</th>
<th>Accidents</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>2008</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>2009</td>
<td>15</td>
<td>1</td>
</tr>
</tbody>
</table>

Up to date 3 fire accidents with no fatal casualties recorded.

CURRENT ISSUES

ASECAP MEMBERS & TUNNELS

SOME BEST PRACTICE ON TUNNELS FROM ASECAP MEMBERS (Infrastructure – Operation - Planning)

- 42 tunnels concerned: a total of 90 km
- Safety audit: made 100%
- Total estimated cost: 900M€
- Percentage of achievement: 80%

Tunnel safety: 6 years experience of the Directive Situation for the French motorway operators:

- 42 tunnels concerned: a total of 90 km
- Safety audit: made 100%
- Total estimated cost: 900M€
- Percentage of achievement: 80%

REFURBISHMENT ON HIGH TRAFFIC SECTIONS

The experience of ESCOTA shows that it is possible to refurbish tunnels without interrupting traffic flows:

- Keeping operational one lanes over 2 tubes at nighttime and allowing traffic over 2 tubes x 2 full lanes during daytime appears feasible.

The organization to be set up is a very complex and expensive one: contracts for works need to be performed being “pessimistic” about the number of nights a year where the work will be authorized by the operator.

Payback of investment for safety

Directive 2004/54/CE is an additional cost to existing contracts. Investments for safety and Financial Equilibrium of Concessions is anyhow needed.

In some cases it is possible payback of investment through the toll level. If the investment is higher, in most cases, a new equilibrium can be found through the extension of the concession period.

European Institutions strictly monitor and enforce legitimacy of procedures on concessions:

The current approaches in order to allow the investments for safety are either the authorization from EC for the extension of the Concession period allowed as a “State Aid” or as an instrument for the financial equilibrium.

For instance this kind of approach was adopted by EC in February 2006 in order to cover additional costs for new standards of safety both for the Monte Bianco Tunnel and for the Maurice Lemarie Tunnel.
Currently, 140 Tunnel facilities are operated with a total length of about 324 km from ASFINAG. Because of this high proportion of tunnel on all routes, ensuring a maximum level of safety and efficiency in tunnel is a key goal for ASFINAG. Directive is applied on all motorways, not only in TERN. According the experience of ASFINAG, tunnel safety could be greatly improved thank to technological developments and organizational measures in the event of an incident or accident. ASFINAG annually invests about €200 million in construction and rehabilitation of tunnels. In line with the Directive timeframe.

**TUNNELS IN THE EUROPEAN TERN**

It is interesting to observe that a very important share of the European TERN Tunnels is located in Italy and Austria...

**TUNNELS IN THE TERN NETWORK IN LIGURIA**

... and that an important share of the tunnels in the National Network are located in specific regions (e.g. Liguria)

**TUNNELS OF LIGURIA IN THE EUROPEAN NETWORK**

17% of the tunnels of the European Network is located in Liguria

**HIGH CONCENTRATION AREAS**

Liguria is maybe the harder one but not the only case

High concentration in works (traffic and safety)

Higher costs in charge of specific operators