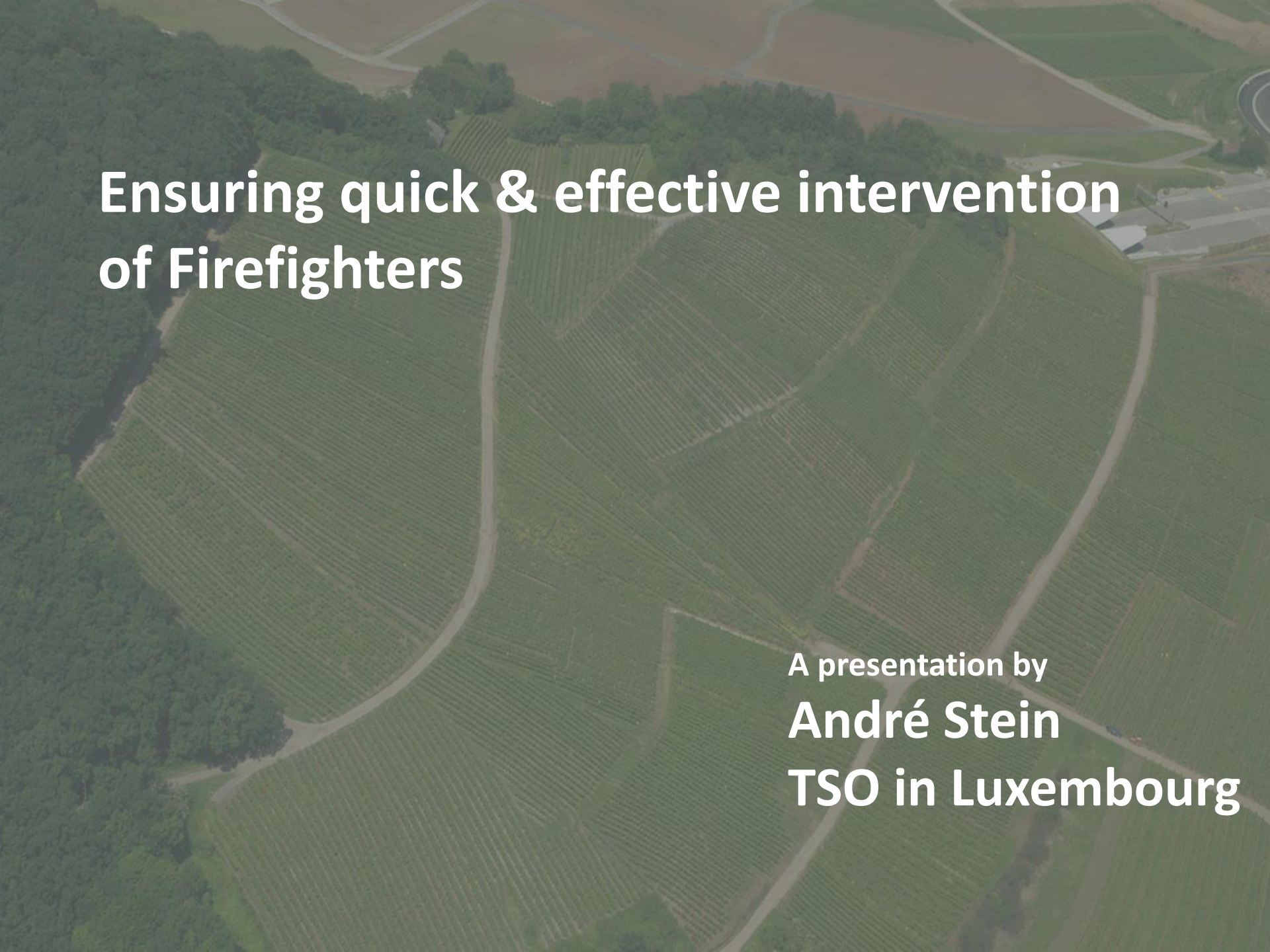
3rd Forum for Tunnel Safety Officers 27 and 28 March 2014

Ensuring quick & effective intervention of Firefighters



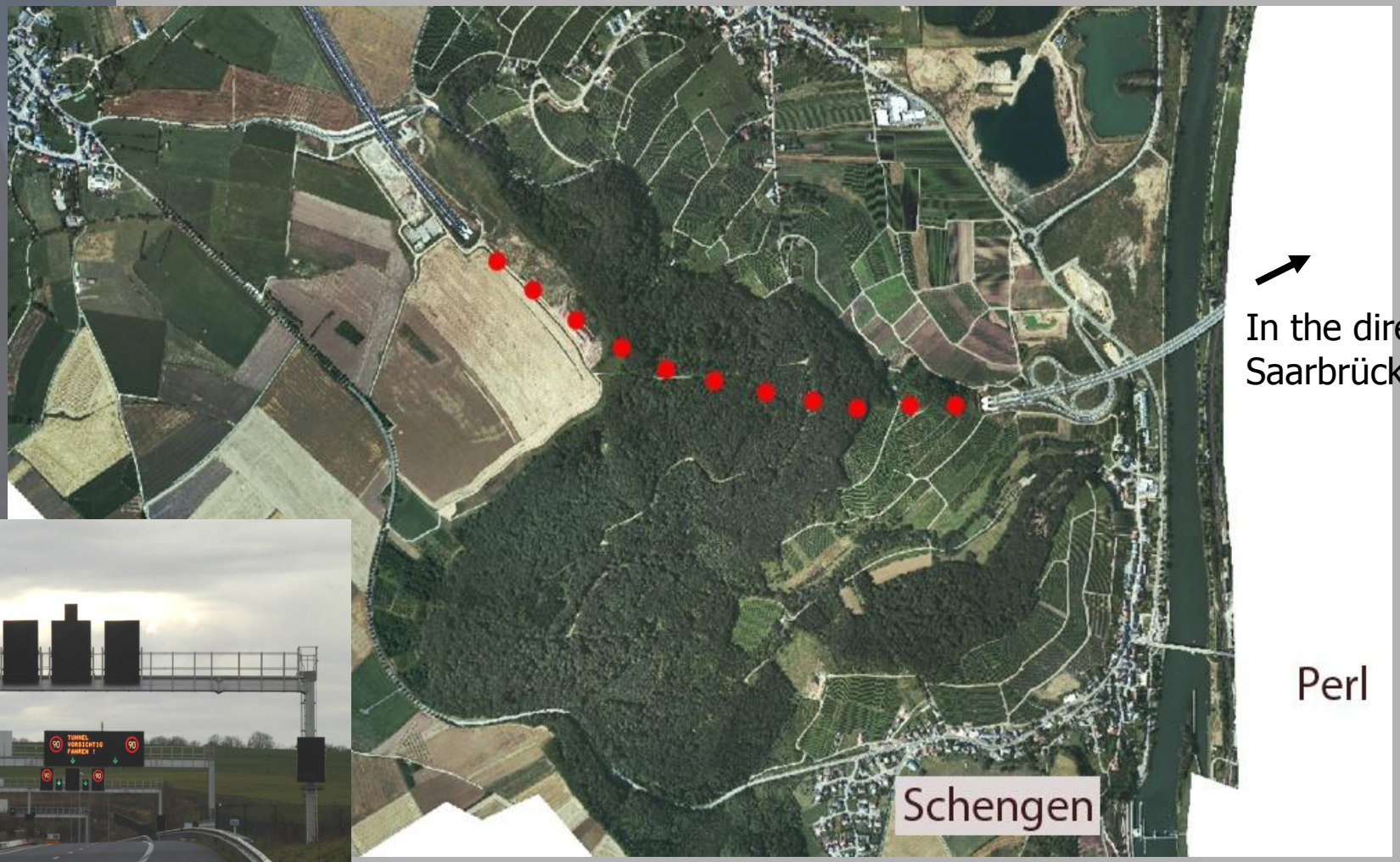
Ensuring quick & effective intervention of Firefighters

A presentation by
André Stein
TSO in Luxembourg

Tunnel Markusberg

TUNNEL MARKUSBIERG

in the direction of Luxembourg/Bettemburg

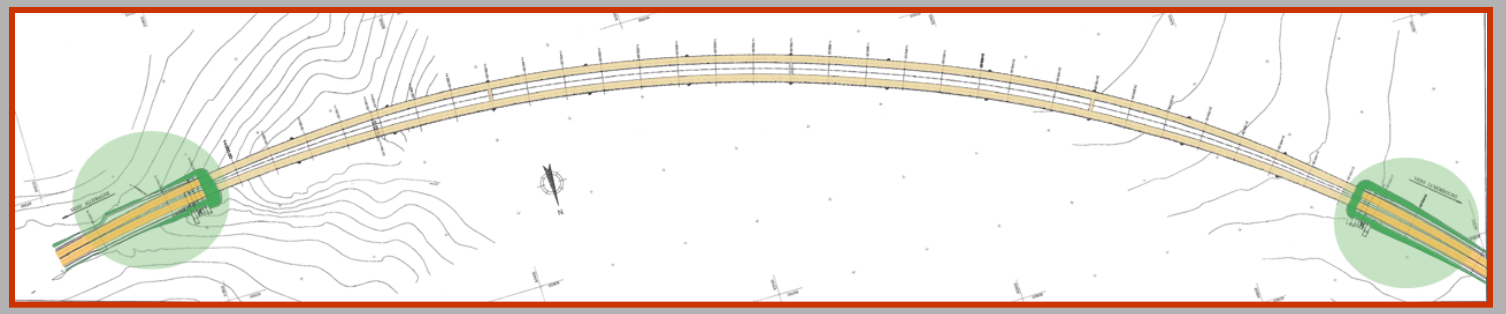


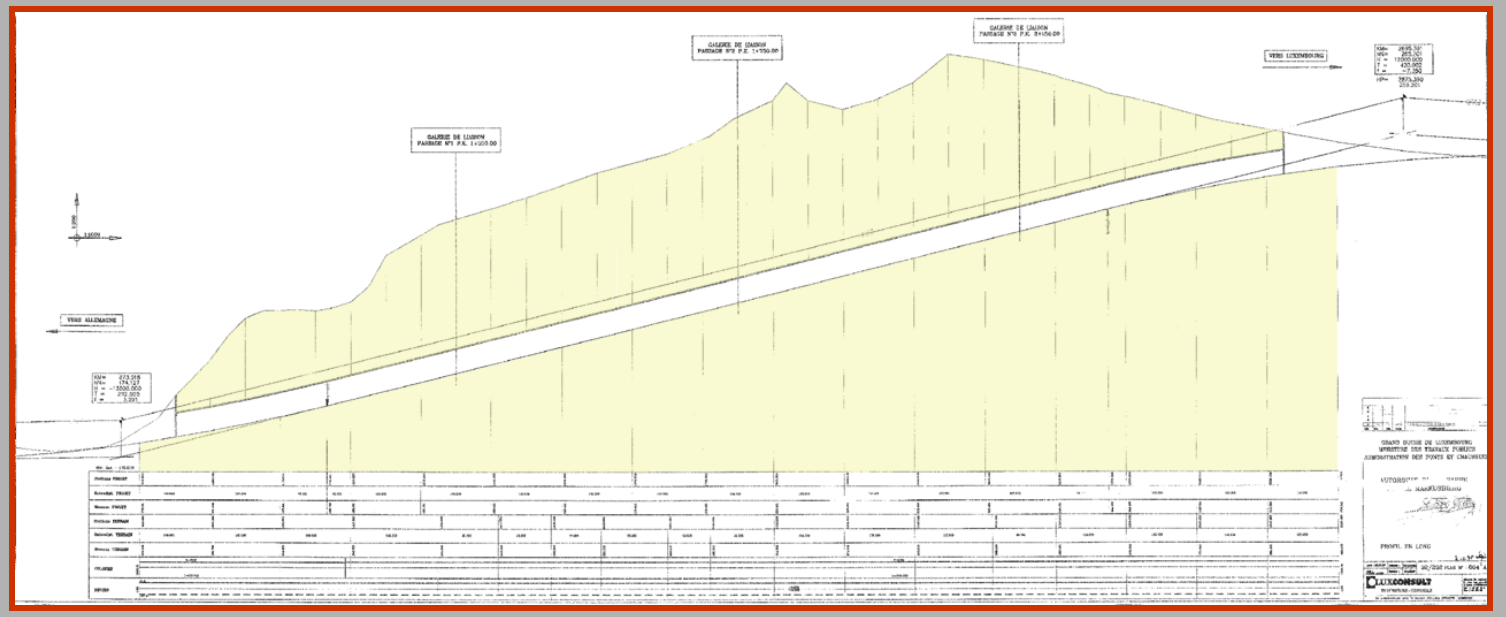
A Luxembourgish village, well known by the Schengen Agreement

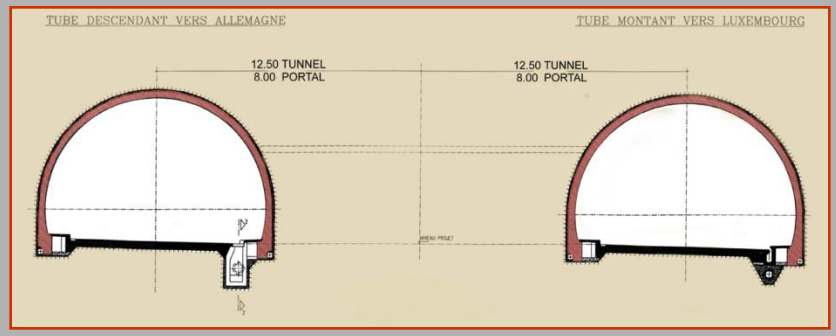
TUNNEL MARKUSBIERG


Germany
The Moselle River
Schengen Junction

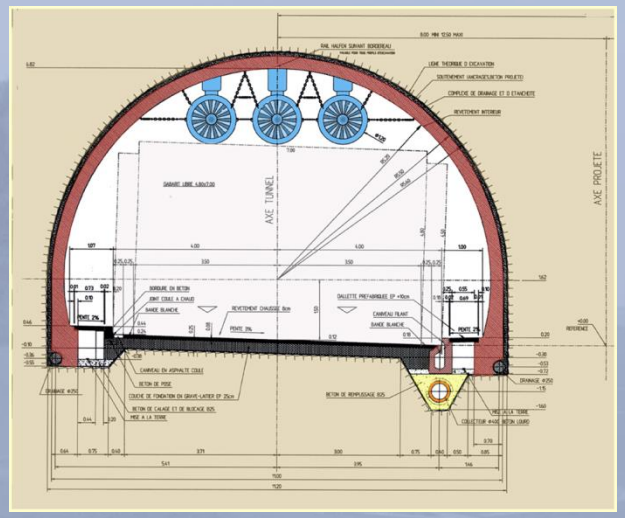
TUNNEL MARKUSBIERG







Some data:



2 tubes with 2 traffic lanes

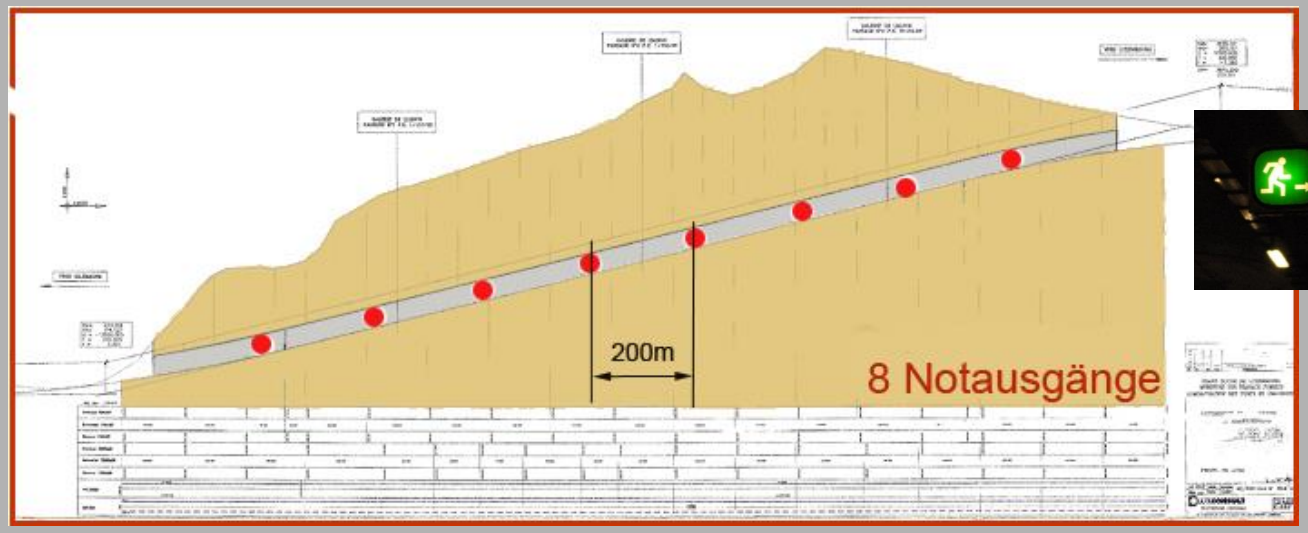
Total length: 1585 meters

Longitudinal gradient (slope): 5%

Center distance of 2 Tubes: 25 meters

Opening to traffic:24 Juli 2003

Distance between emergency exits



TUNNEL MARKUSBIERG

Exercise of 2008 – Experiences

- The national emergency call center uses an analog pager system (firefighters receive text messages).

- The exercise has shown that the “Mobilization Order” to firefighters can take up to several minutes

Exercise of 2008 – Experiences

- The national emergency call center transmits no information about the vehicle involved or the exact position of the fire.

  Is it possible to transmit more information faster to the firefighters?

Exercise of 2008 – Experiences

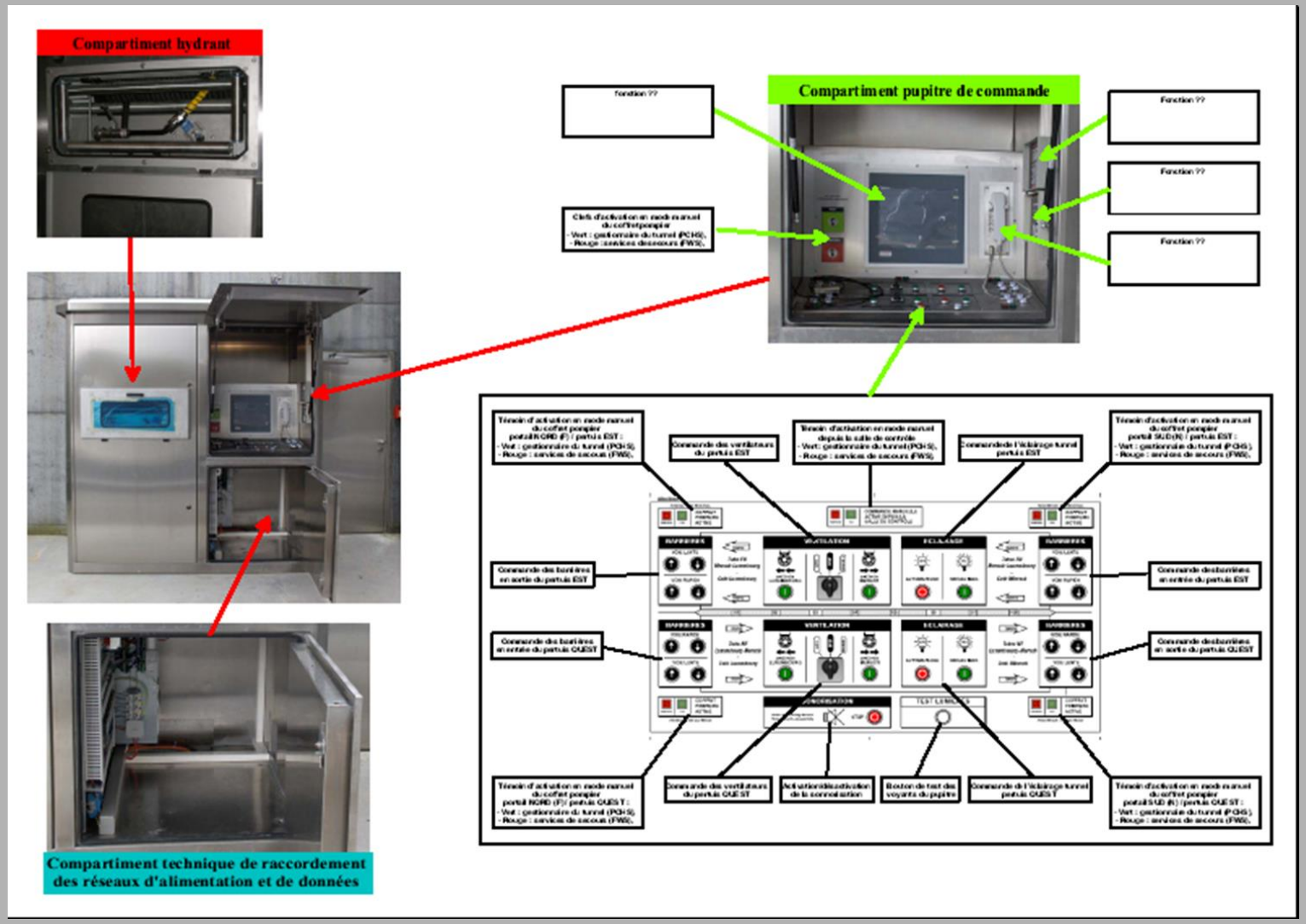
- The firefighters needed 10 minutes to get from the tunnel portal to the gallery where the intervention should begin.

This demonstrates the need to transmit accurate information to the firefighters

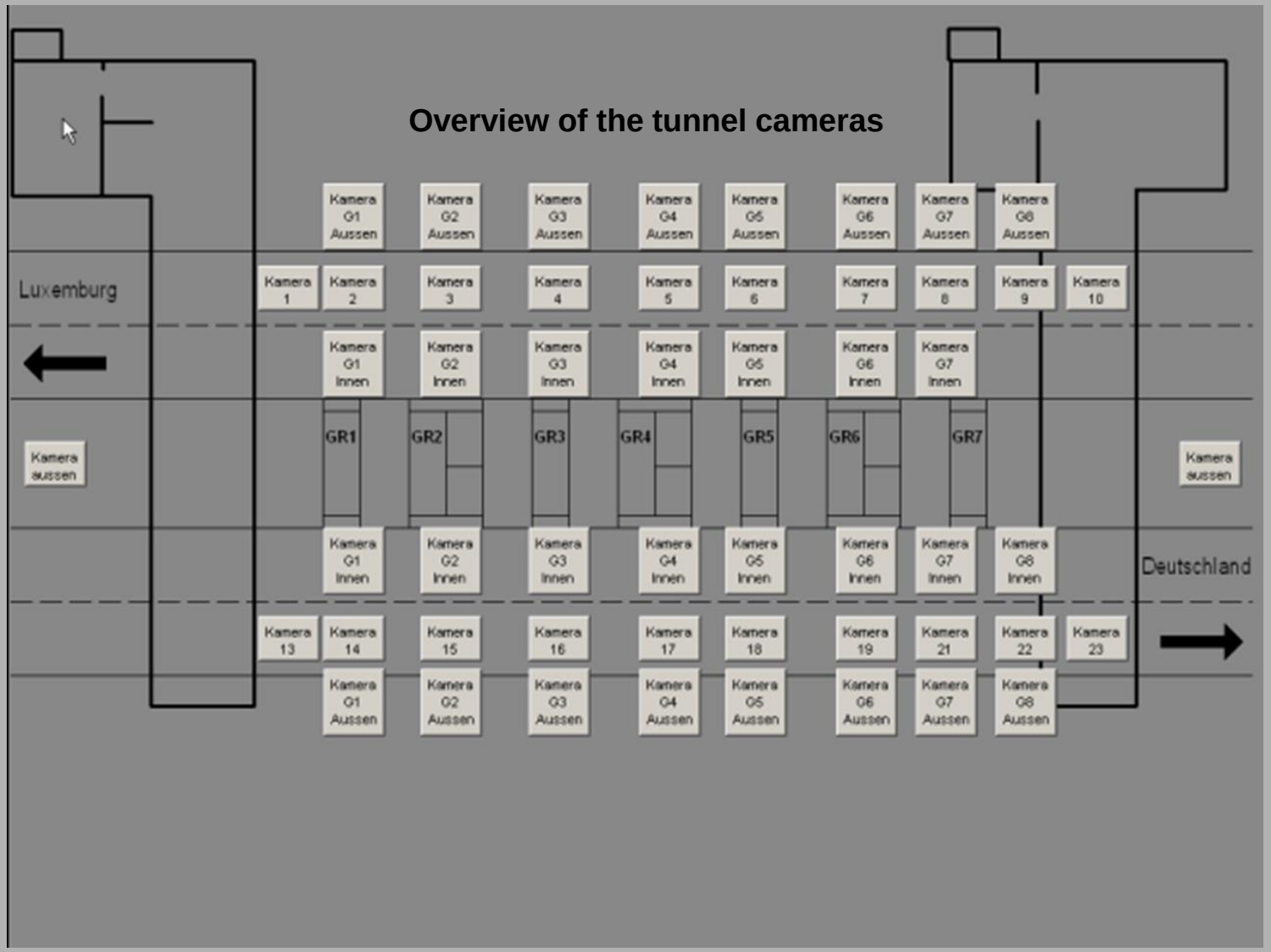
Exploring the local situation

Firefighter's Control Panel
in a stainless steel cabinet

Exploring the local situation

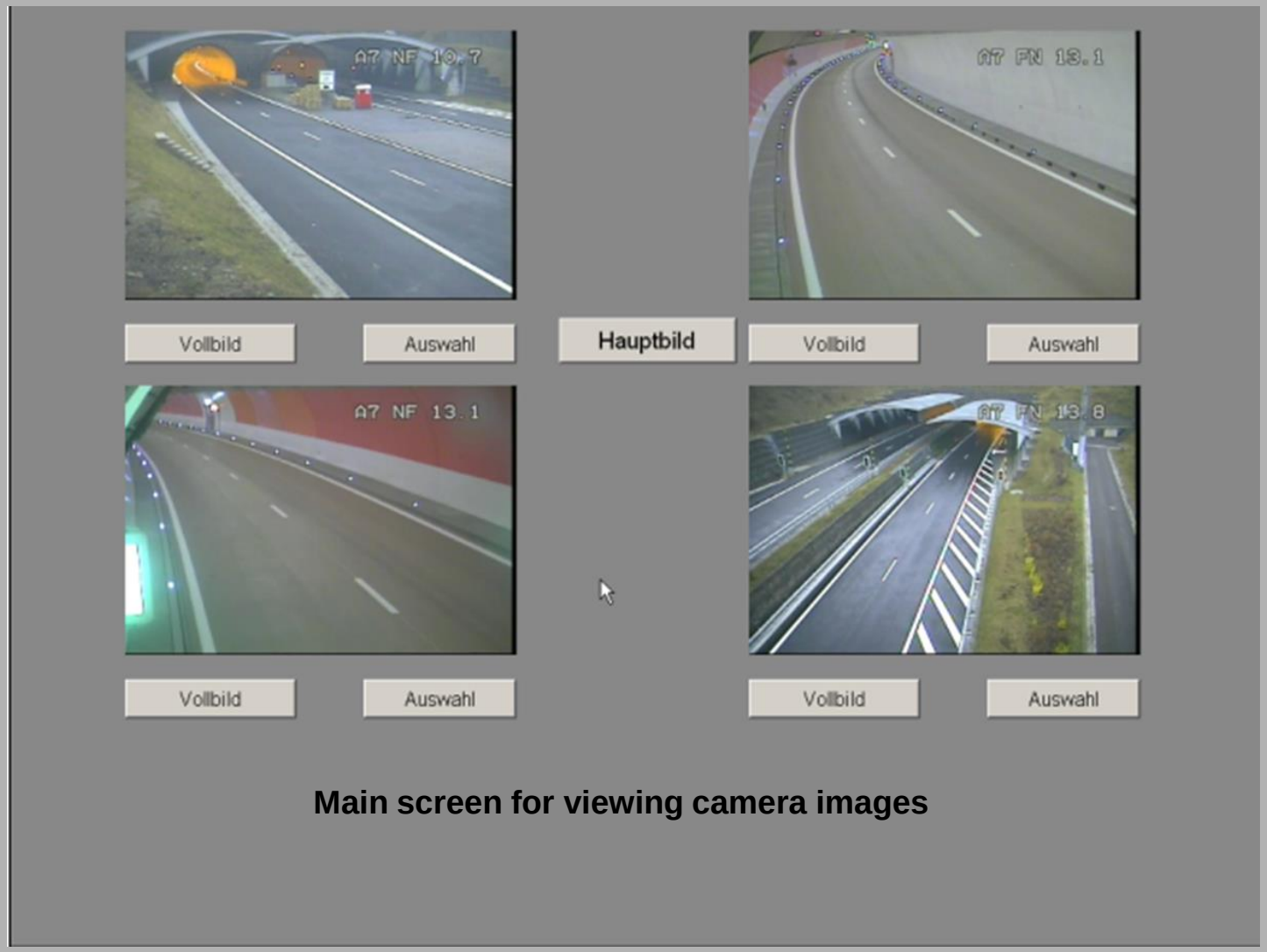


Exploring the local situation



TUNNEL MARKUSBIERG

Exploring the local situation



Main screen for viewing camera images

TUNNEL MARKUSBIERG

So we have established in 2008:

1. The “Mobilization Order” comes late and is not precise enough.
2. The firefighters take too much time to explore the situation.
3. For a long time no one has taken the responsibility to give the order to act.

This is an example for “decision inertia”

Why are we confronted with “decision inertia”?

Tunnel fire = an unclear, confusing, unfamiliar situation to be addressed under time pressure.

For volunteer firefighters moreover:

- Poor role understanding
- Poor trust in team
- Concern in terms of accountability
- Insufficient knowledge of emergency response plan

What to do?

What do we need?

We need:

- A faster way to transmit information.

- This information must be complete and reach every firefighter.

- The information is not official, but allows everyone involved to know what to do.

→ Prevention of “decision inertia”

What we want to achieve
→ earlier implementation of the fire fighting

Time is the all-important factor in a tunnel fire.

5 or 10 minutes can decide on life or death,

decide if a tunnel is permanently damaged or is quick again under traffic.

Is a TSO concerned by this problem?

or

Is it the problem of the fire brigade?

According to Article 6, the TSO is in charge:

"One Safety Officer who shall coordinate all preventive and safeguards measures to ensure the safety of users"

"The Safety Officer shall ensure coordination with emergency services"

"The Safety Officer shall take part in the definition of safety schemes"

Remind that we need:

- A faster way to transmit information.

- This information must be complete and reach every firefighter.

- This information allows everyone involved to know what to do.

Our answer is an Alarm Management Solution, namely AlarmTILT®

What is AlarmTILT ?

AlarmTILT® is an alert and notification solution dimensioned for incident and emergency situations

AlarmTILT® integrates redundantly with worldwide telecom operators for fast two-way messaging

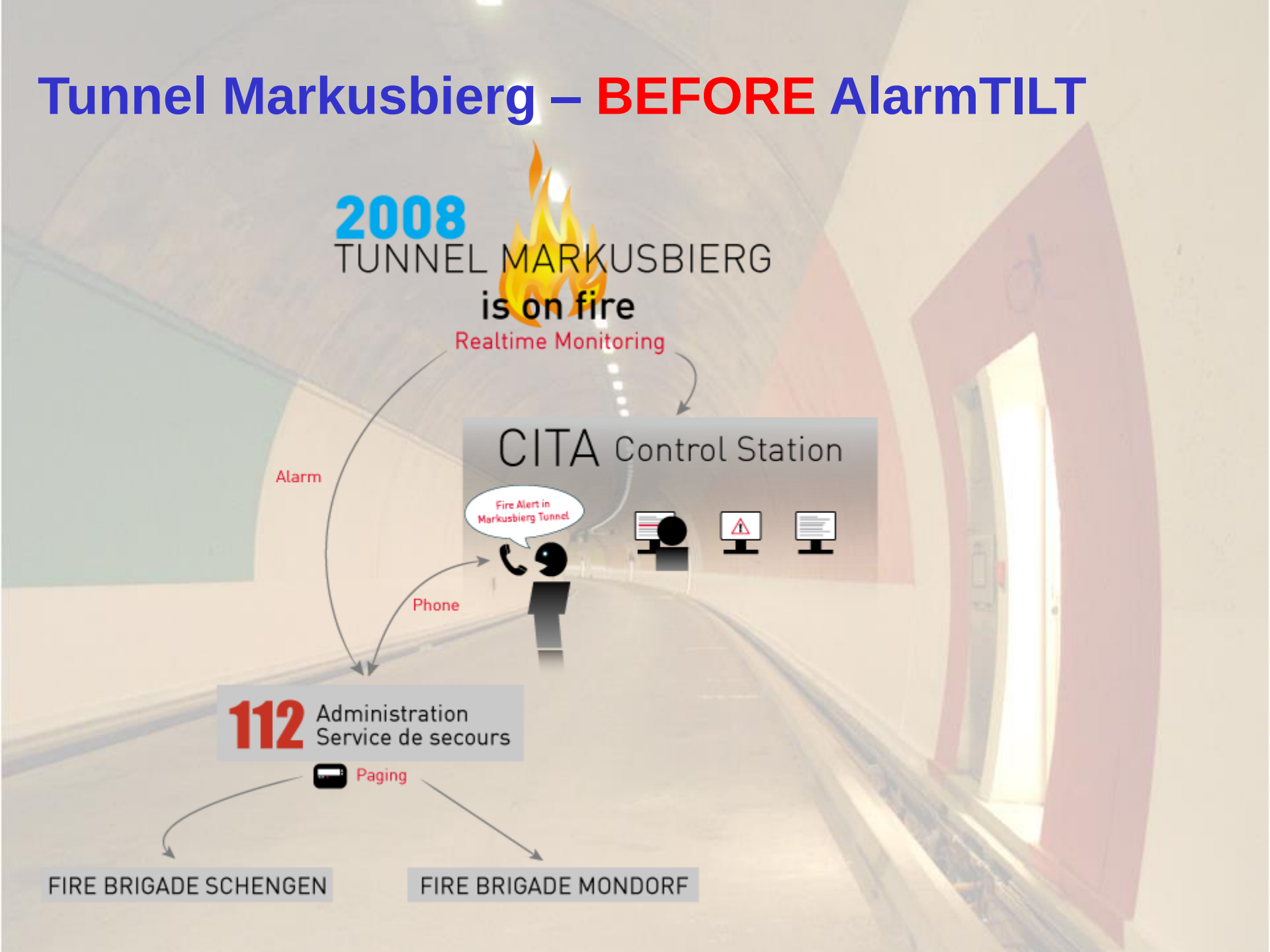
Why AlarmTILT - Benefits?

Efficiency: explicit and targeted two-way messaging to various groups of intervention teams

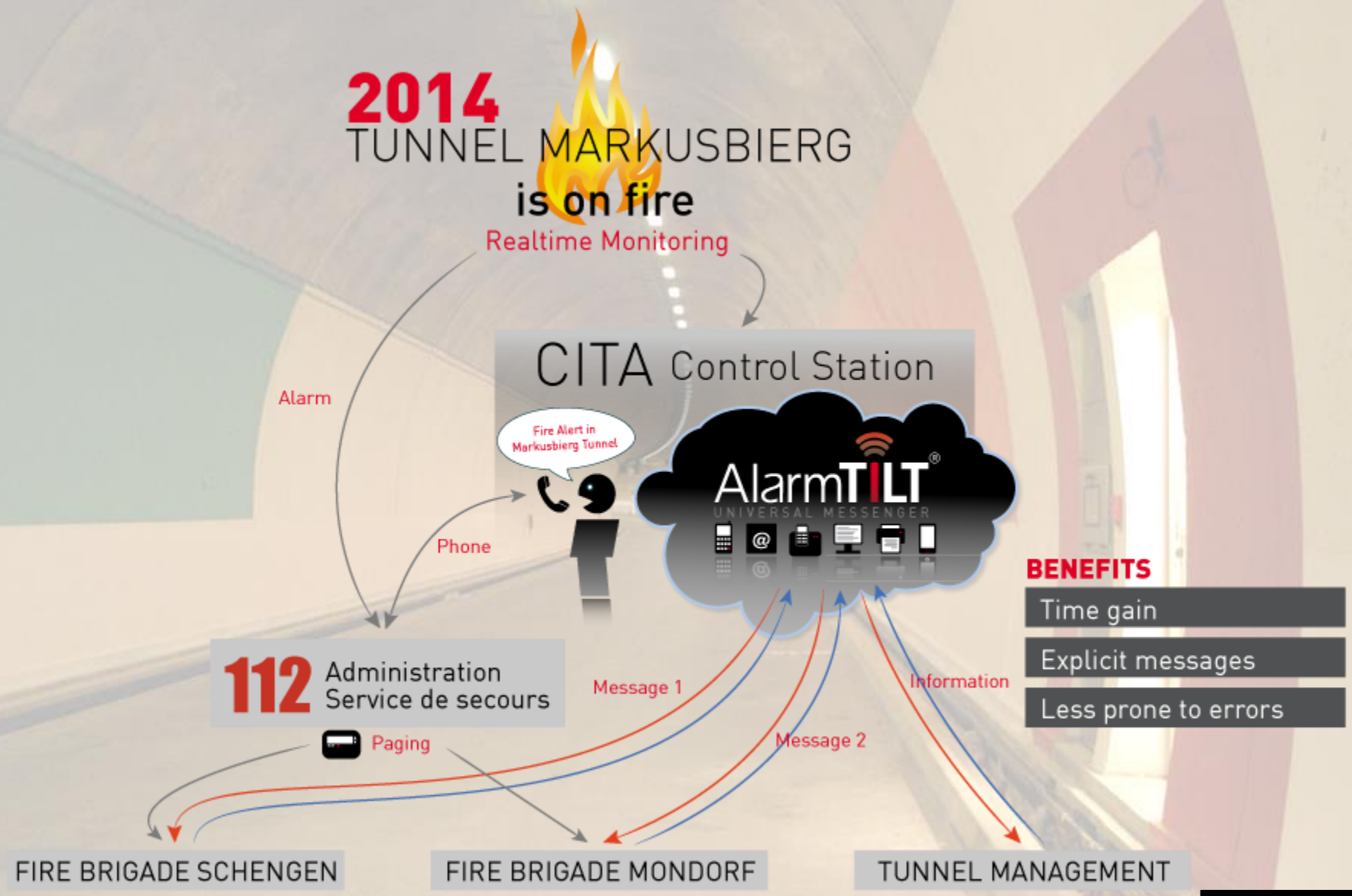
Maturity: implemented with Luxembourg Government since 2005.

Ready to use: no ICT or development needed

Tunnel Markusbierg – BEFORE AlarmTILT



Tunnel Markusbierg – WITH AlarmTILT



Link to AlarmTILT

Demonstration
TSO interested to receive an Emergency Message

Name	Phone Number	Fire Brigade Schengen	Fire Brigade Mondorf	Management
Bert Geukens	+32 486 64 29 86	X		
Erwin Hagenmaier	+49 171 687 65 59	X		
Drago Dolenc	+38 641 344 325	X		
Stilianos Skarvelakis	+30 6944 349924	X		
Christina Kluge	+49 151 11 67 41 42	X		
Lukáš Rákosník	+420 602 268 892		X	
Konstantinos Tsiamouras	+30-6983334017		X	
Antti Mustaniemi	+358 (41) 4663138		X	
Aleš Lebl	+420 736 724 131		X	
Marc TESSON	+ 33 (0)6 63 31 52 82		X	
F. Embert-Kreiser	+49 152 54 77 97 26			X
Wilfred van Pelt	+31 611 52 61 72			X
Inigo Perez Martinez	+34 629791497			X
Johan Bosch	+31 6 557 453 40			X
Andre Stein	+352 621780744			X

Link to AlarmTILT

AlarmTILT Demo – Alerted groups

Fire Brigade Schengen

Fire Alarm Tunnel Markusbierg in tube S-P direction Luxembourg - Truck on fire - between gallery 4 and gallery 5 - **Intervention through upgoing Tube** - Open access between lanes - wait for "GO" from colleagues - enter tube on fire through gallery 4. Confirm by replying "YES"

Fire Brigade Mondorf

Fire Alarm Tunnel Markusbierg in tube S-P direction Luxembourg - Truck on fire - between gallery 4 and gallery 5 - **Intervention through descending tube** - enter tube on fire through gallery 4. - Confirm by replying "YES"

Tunnel Management

Fire Alarm Tunnel Markusbierg in tube S-P direction Luxembourg - Truck on fire - between gallery 4 and gallery 5 Confirm by replying "YES“

An example from practice:

(photo: police)

Fire in the Markusberg tunnel / 2 May 2013

What was achieved?

1.) Three minutes faster than the message of the national emergency call center.

2.) At least 5 minutes gain of time on site because

- Everyone knows what happened, and where
- Everyone knows where he had to go
- For nobody, the situation was unclear or confusing

This gain of time can decide on life or death, decide if a tunnel is permanently damaged or is quick again under traffic.


Thank you for your attention