



Asociación Argentina
de Carreteras



November 6th - 8th, 2013 Hotel Panamericano – City of Buenos Aires, Argentina
“URBAN MOBILITY, ROADS NETWORK OPERATION AND ITS APPLICATIONS”

Traffic Management on the Highways in Switzerland

Heinz Suter, FEDRO, Switzerland



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra



Agenda

- Switzerland - FEDRO
- Situation 2008
- Projects
- System Architecture
- Tunnel of Gotthard – special case

Construction: FEDRO offices

Zofingen:
Central and north-
western Switzerland
Range: 435,6 km

Winterthur:
Northeastern
Switzerland
Range: 423 km

Estavayer-le-Lac:
Western Switzerland
Range: 446,7 km

Thun:
Bern and Wallis
Range: 317,3 km

Bellinzona:
Southeastern
Switzerland
Range: 298,8 km

Map of daily traffic

Schweizerisches Nationalstrassennetz / Réseau suisse des routes nationales

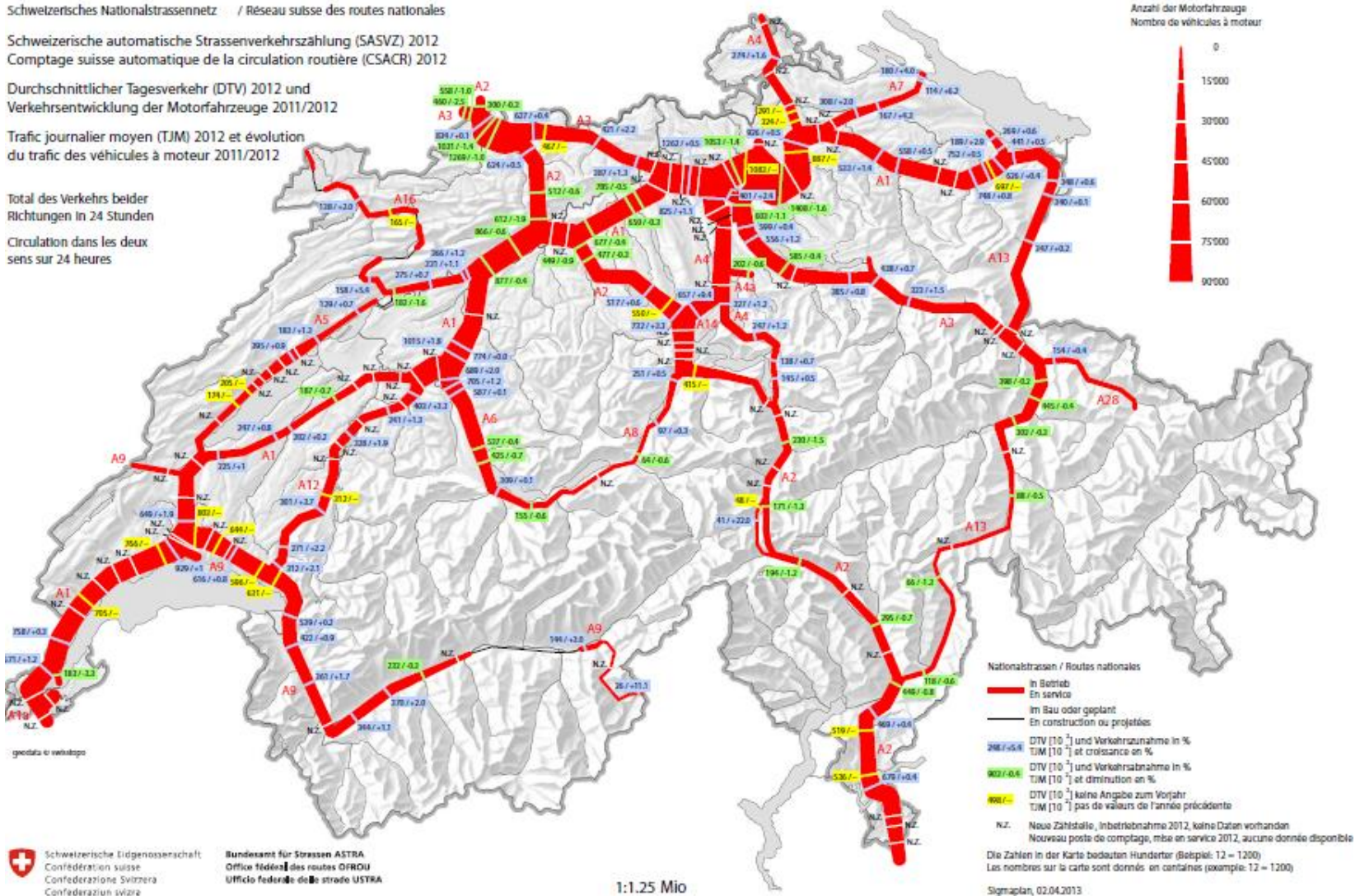
Schweizerische automatische Strassenverkehrszählung (SASVZ) 2012
Comptage suisse automatique de la circulation routière (CSACR) 2012

Durchschnittlicher Tagesverkehr (DTV) 2012 und
Verkehrsentwicklung der Motorfahrzeuge 2011/2012

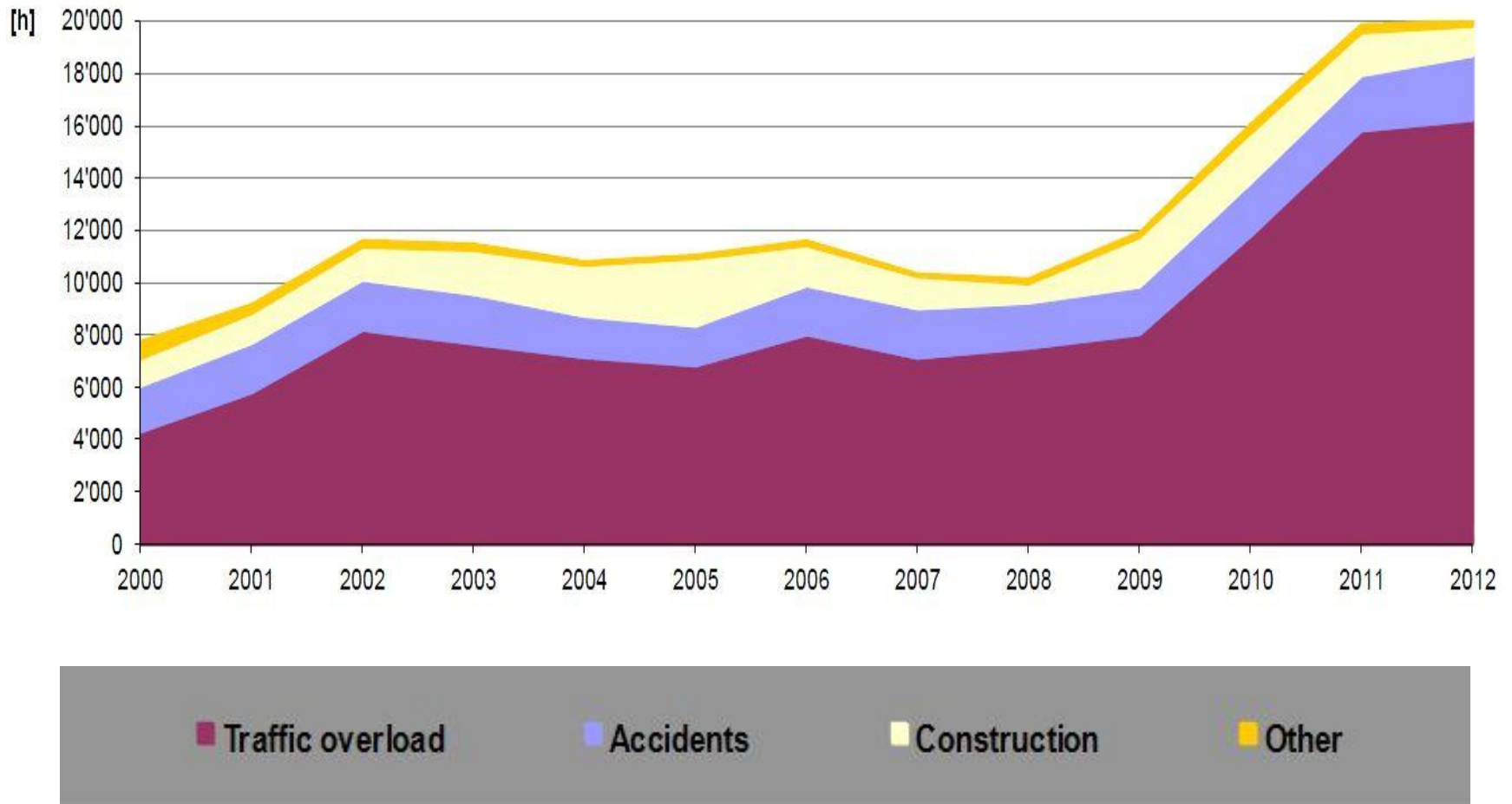
Trafic journalier moyen (TJM) 2012 et évolution
du trafic des véhicules à moteur 2011/2012

Total des Verkehrs beider
Richtungen in 24 Stunden

Circulation dans les deux
sens sur 24 heures



Hours lost in traffic jams



Traffic Management Centre

Location

Emmen / Luzern

Start of operations

1 February 2008

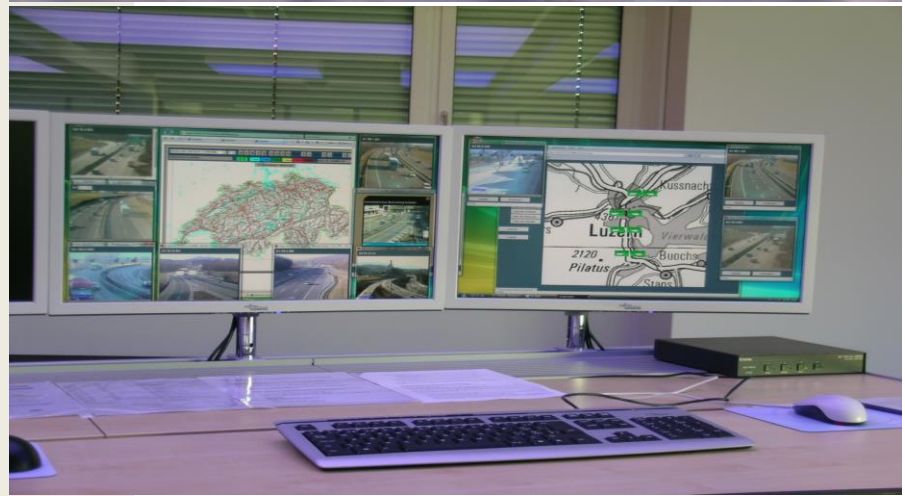
Personnel

Traffic operators

Traffic engineers

IT technicians

Administration



The Confederation's tasks

Traffic management Highways

Active traffic management

- Manage, route, control traffic on national roads and provide traffic information

Design, development and operation of installations

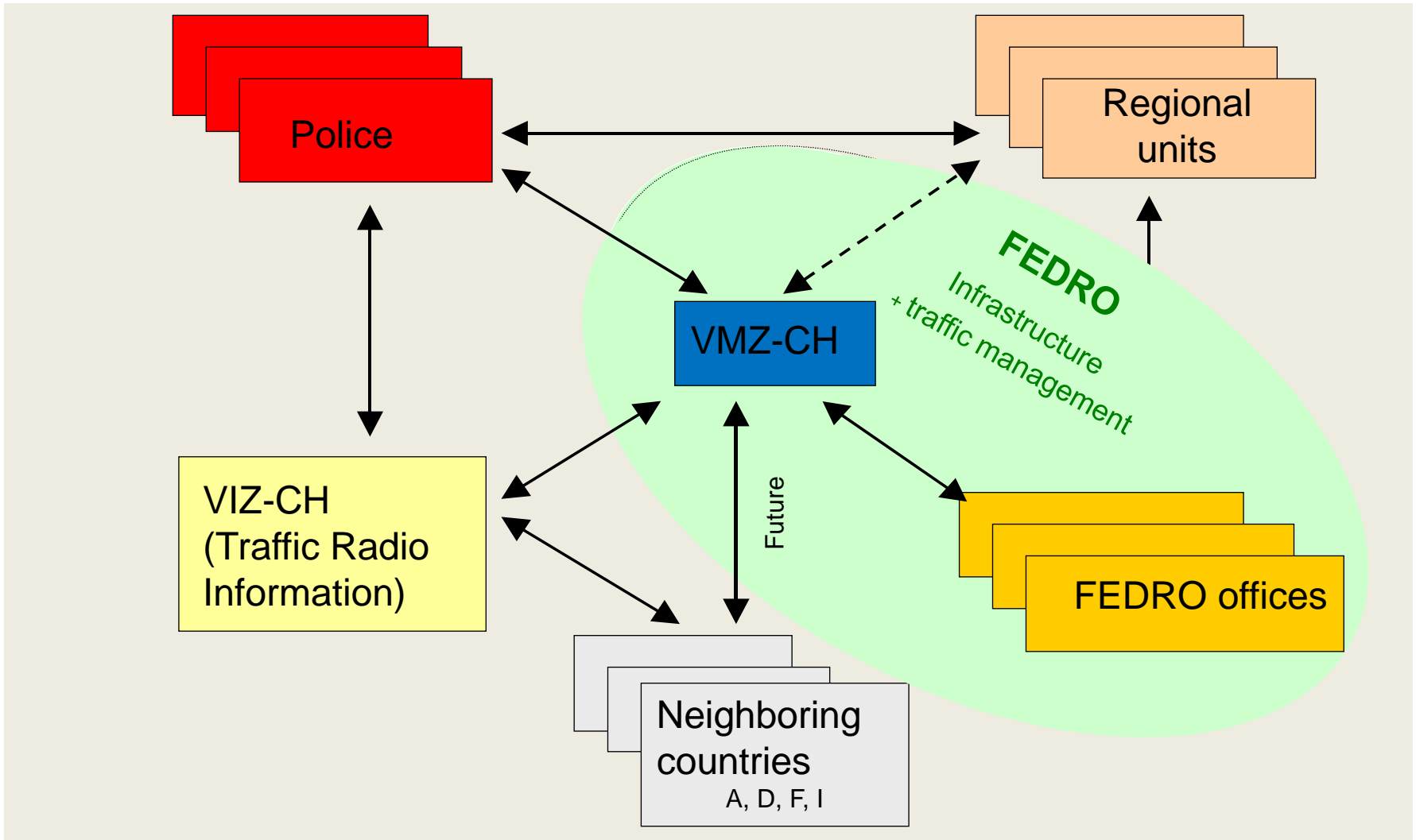
- Traffic Management Centre, signals, video cameras, online counters, data exchange, applications, etc.



What Traffic Management Switzerland hopes to achieve

- Effective management of traffic on the national roads beyond cantonal borders
- Improved coordination of information and measures throughout the national road network
- System interoperability
- New, common operational standards
- Efficient allocation of resources

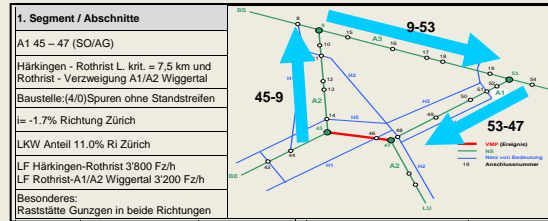
Traffic management partners



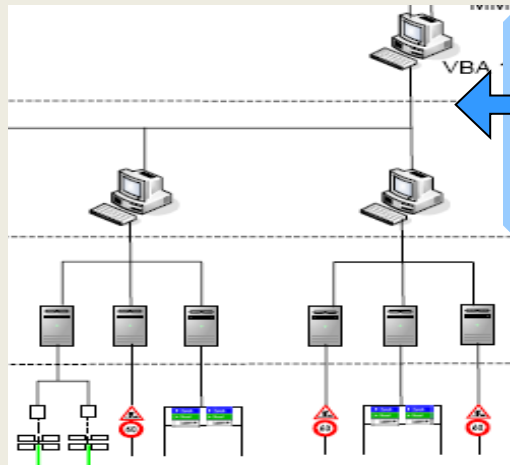
Traffic Management Center 2008



Traffic information



Traffic management plans



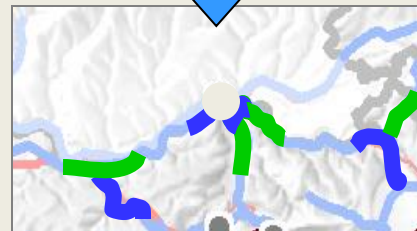
Traffic data exchange



Traffic management centre



Video links



Visualization traffic situation

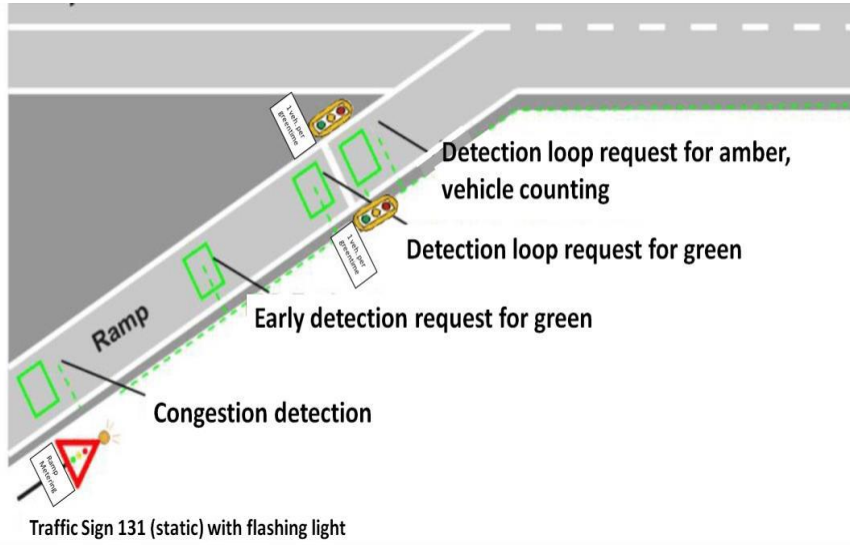
Co-modal Traveller Information

The new www.truckinfo.ch information system

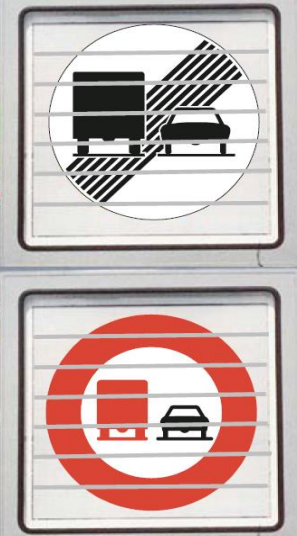


- ▶ Multi-lingual
- ▶ Connected to FEDRO-site
- ▶ Truckinfo Menue
 - ▶ Events
 - ▶ Routing
 - ▶ Weather
 - ▶ Intermodal service
 - ▶ Advice
 - ▶ Contact
- ▶ Terminals for piggyback service
- ▶ Control of map

Traffic Management Projects



Traffic Management Projects



Acceptance by users

Massnahmen:



Variable Speed Limits



Variable Sign Message



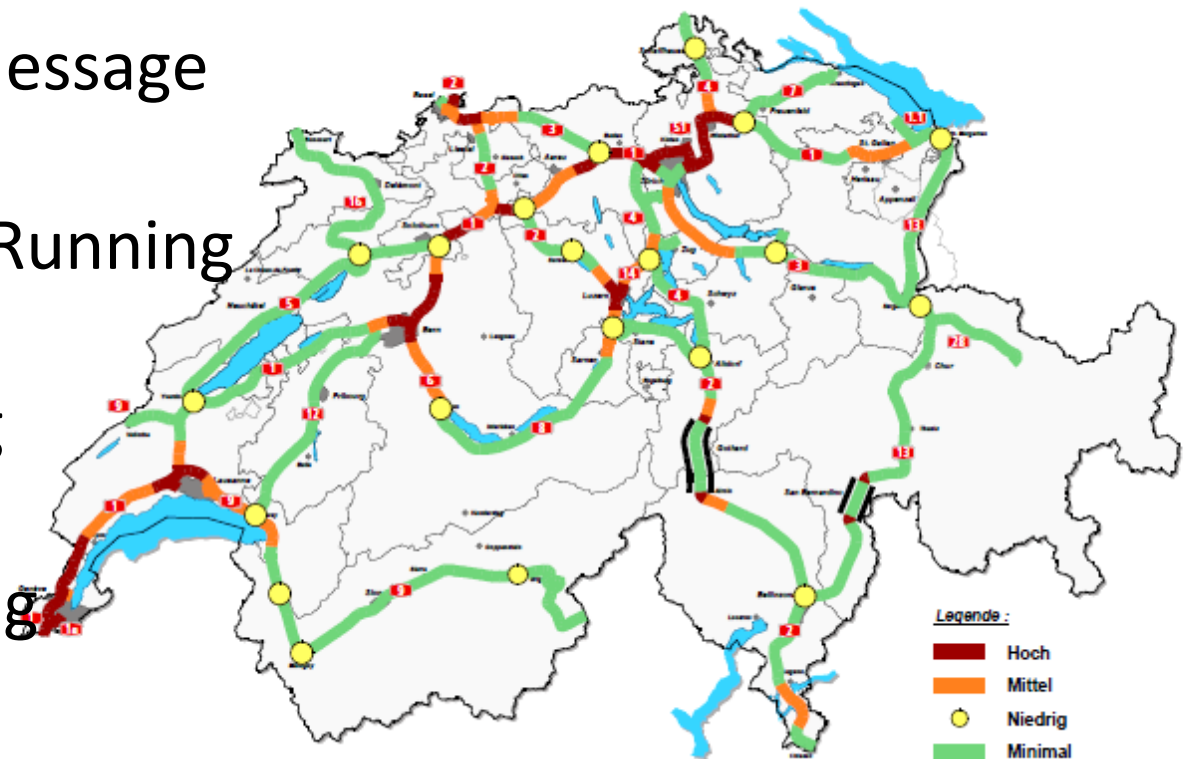
Hard Shoulder Running



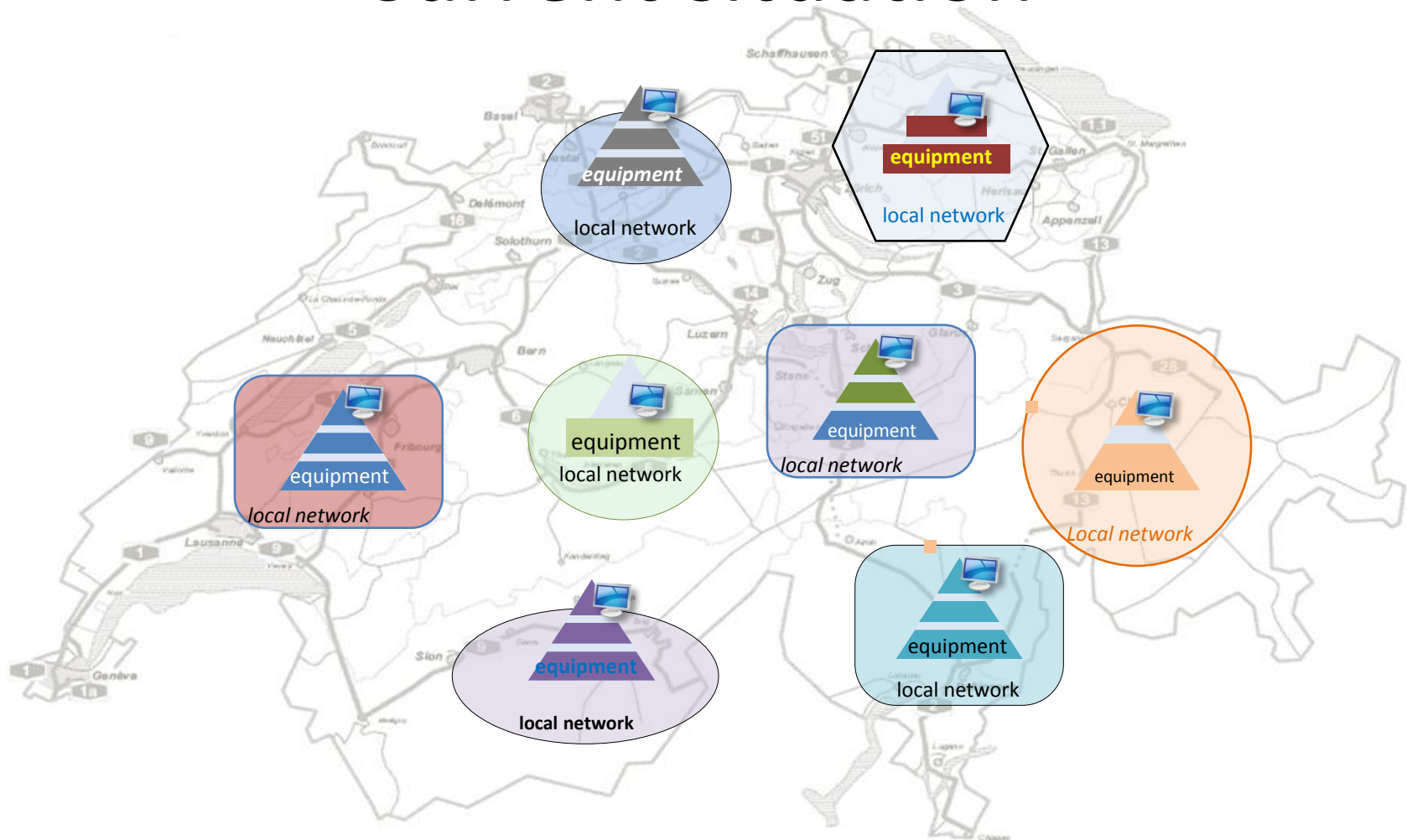
Ramp Metering



HGV overtaking
ban



System-Architecture: Current situation



Need: system architecture



roads




bridges




tunnels


Operations &
safety equipment



supervision & control

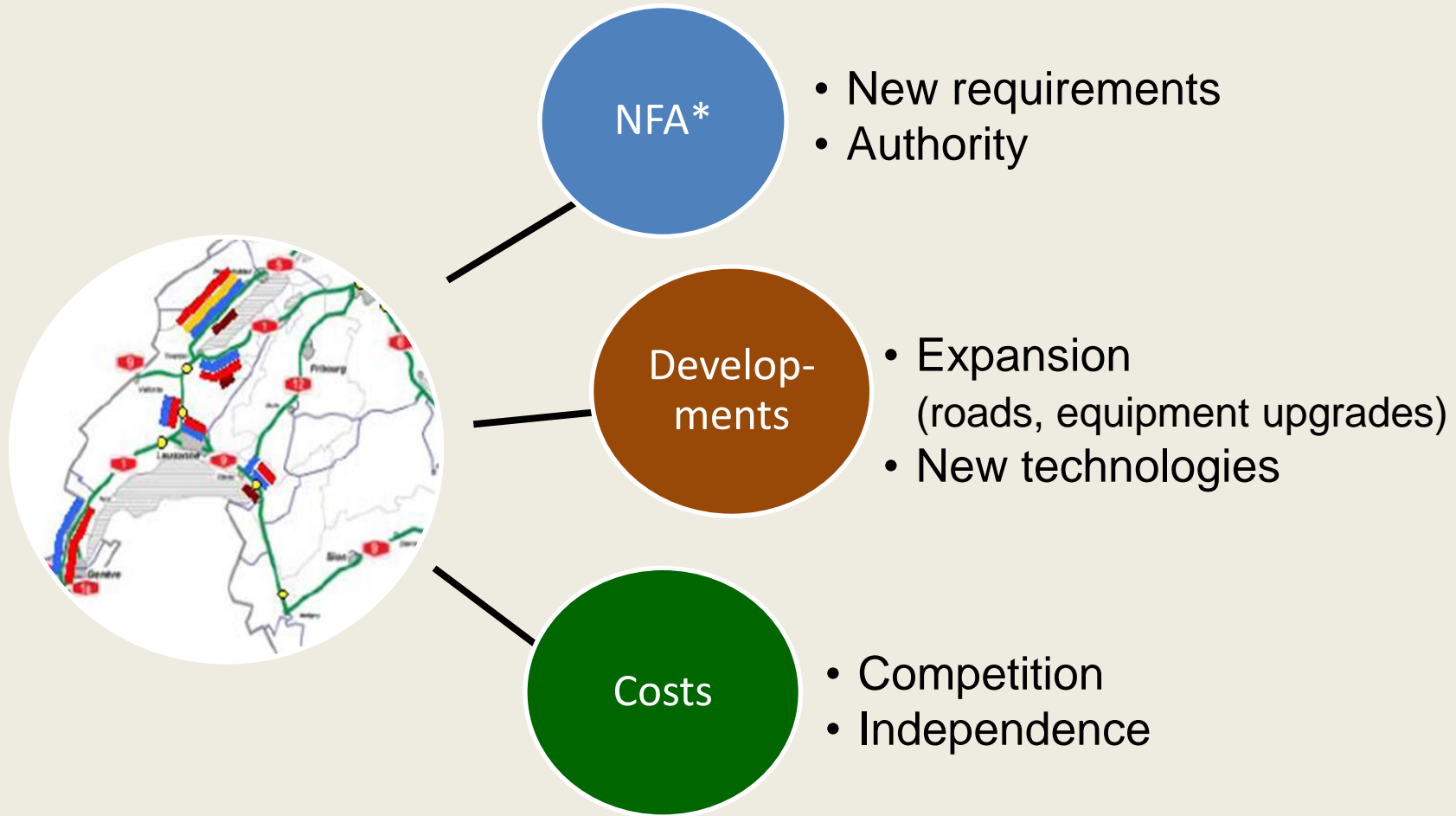


traffic



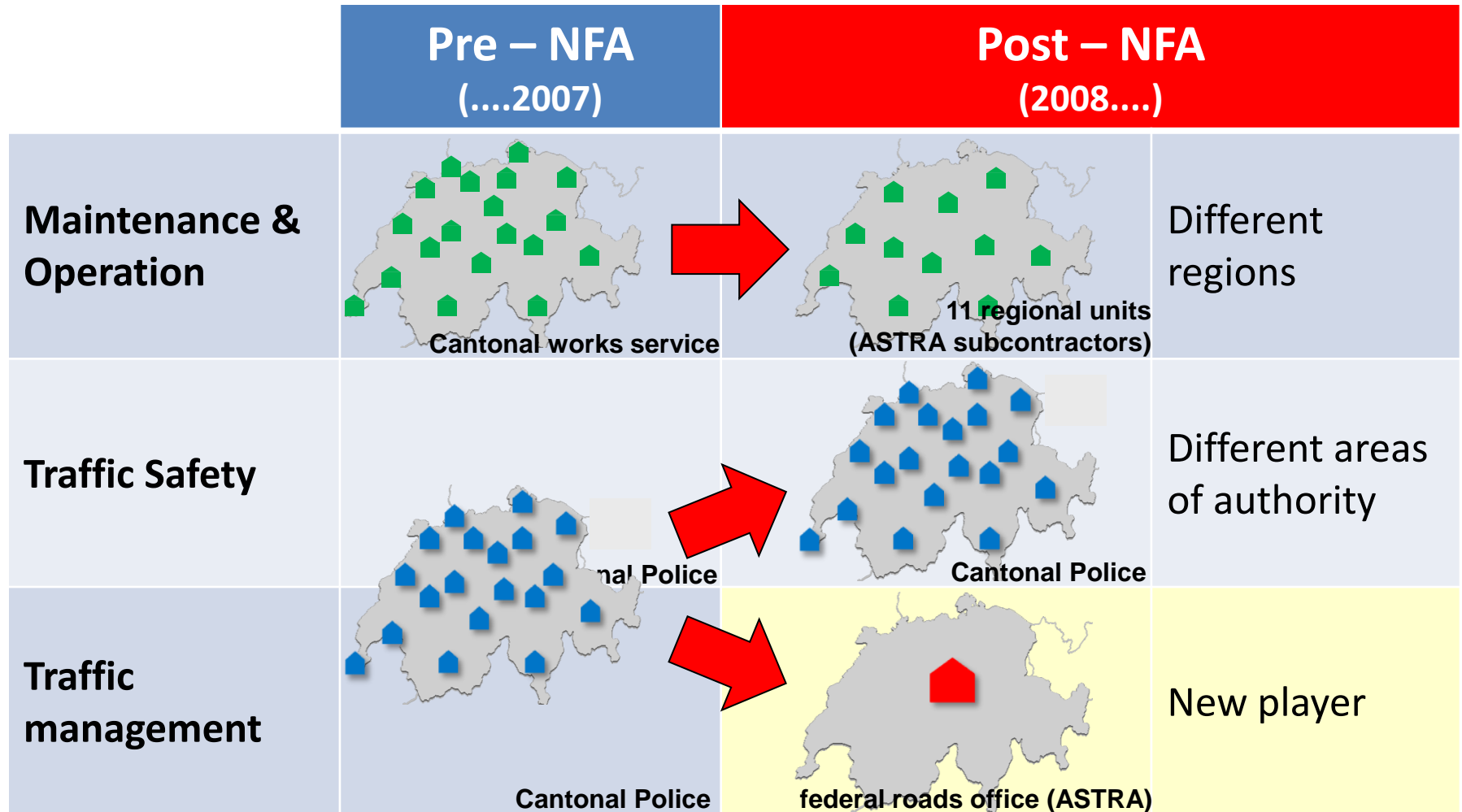
tunnel equipment

Three key drivers of SA-CH

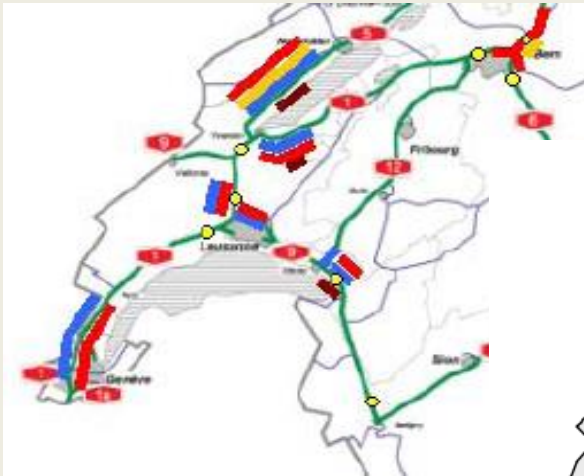


* New arrangement for fiscal equalization and task allocation

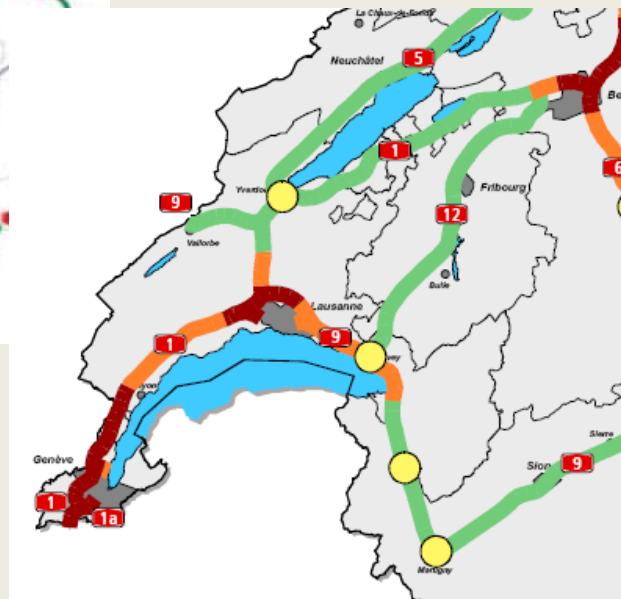
Key driver 1: requirements NFA



Key driver 2: innovations



Situation 2008



Future Requirements

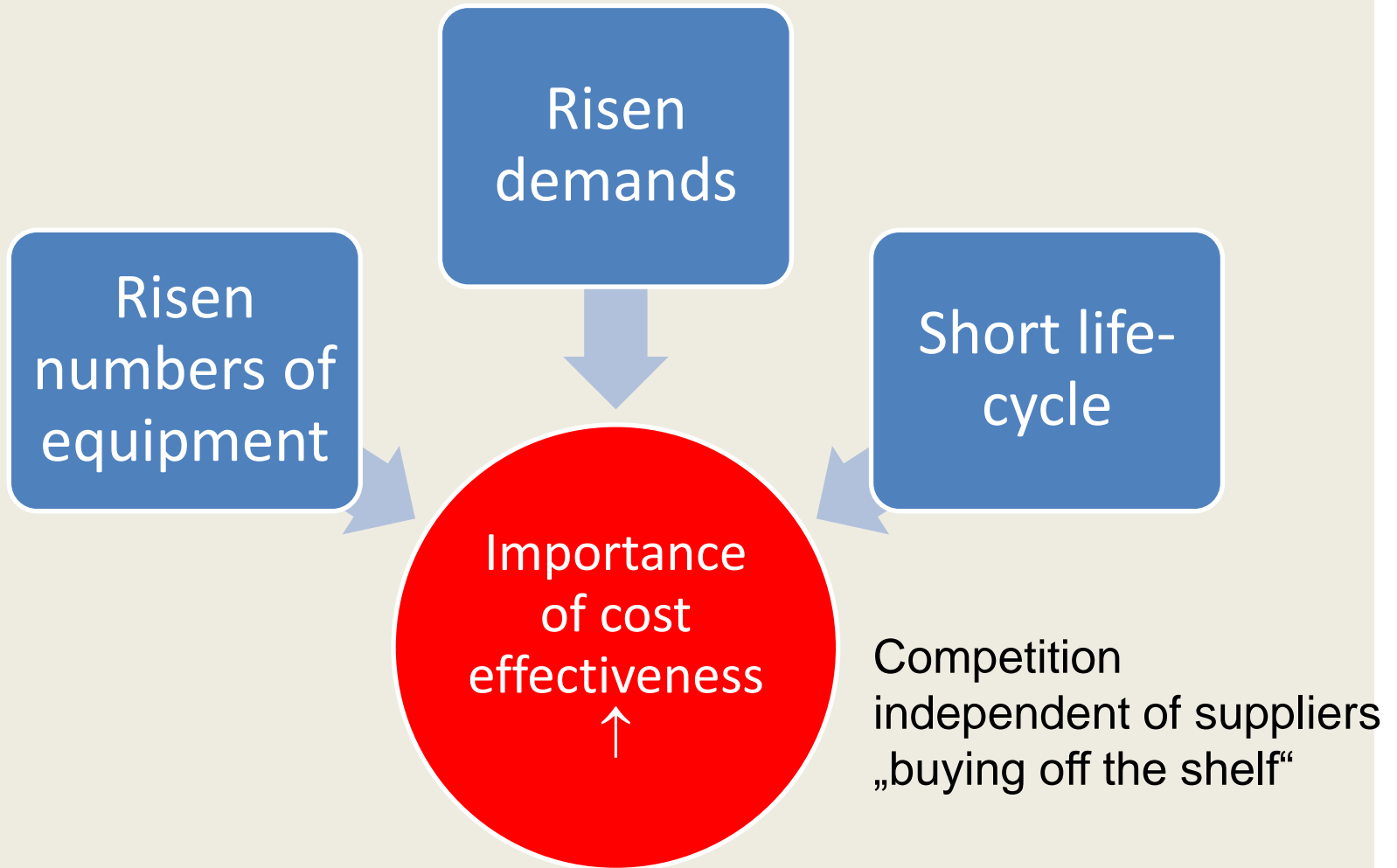
Scarce capacities
Scarce areas
Limited financial means

More equipment
Integration of new technologies



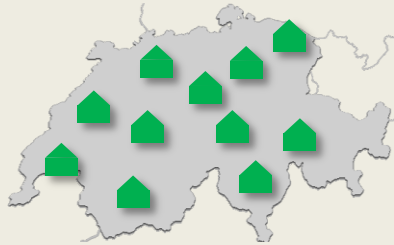
New Needs

Key Driver 3: costs



Vision

Maintenance & Operation
ISE

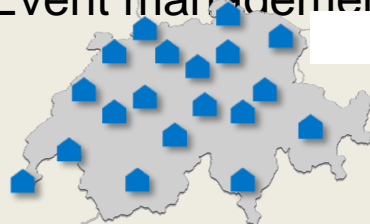


11 Regional units



Application
Maintenance &
Operation ISE

Traffic safety &
Event management



Cantonal police
forces



Application
Traffic Safety

Traffic management



National Centre Emmen
(TMC-CH)



Application
Traffic
Management

Base functionalities

Road site systems (instrumentation and control equipment for tunnel safety, traffic control etc.)

Standards SA-CH: User Interfaces

STS, Tunnel XYZ, 05.05.2012, 17:08 MEZ

Heinz Müller | logout | Einstellungen | Hilfe

Meteo Tunnel XYZ

BZ schalten | ES schalten | Simulation

Führung: XYZ | Signalsicht

Zürich | Fz/h: 2400 | Geschw.: 80 Km/h | Layersteuerung

Tunnel XYZ

Vorschau

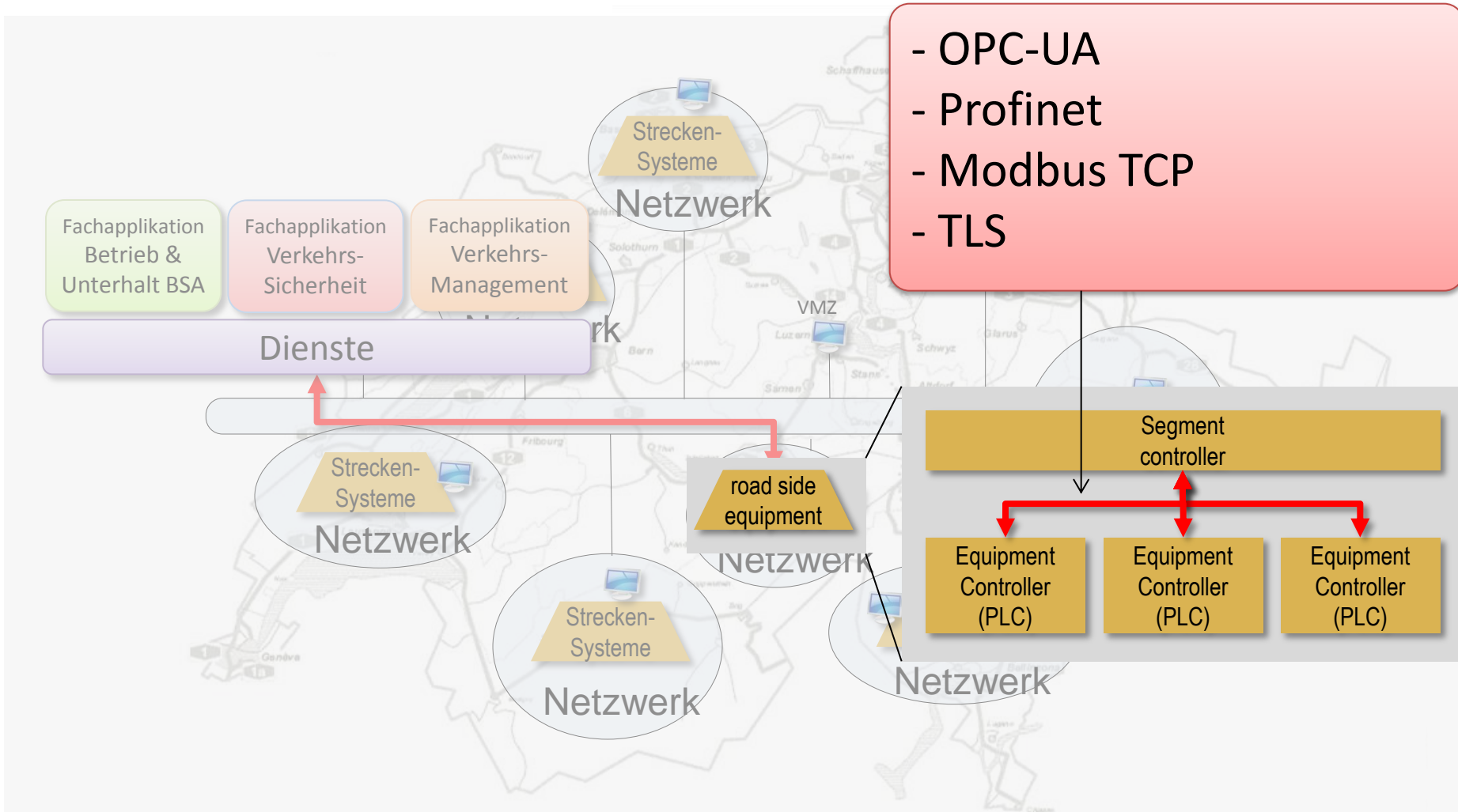
Ist

Fz/h: 2400 | Geschw.: 80 Km/h | Gotthard

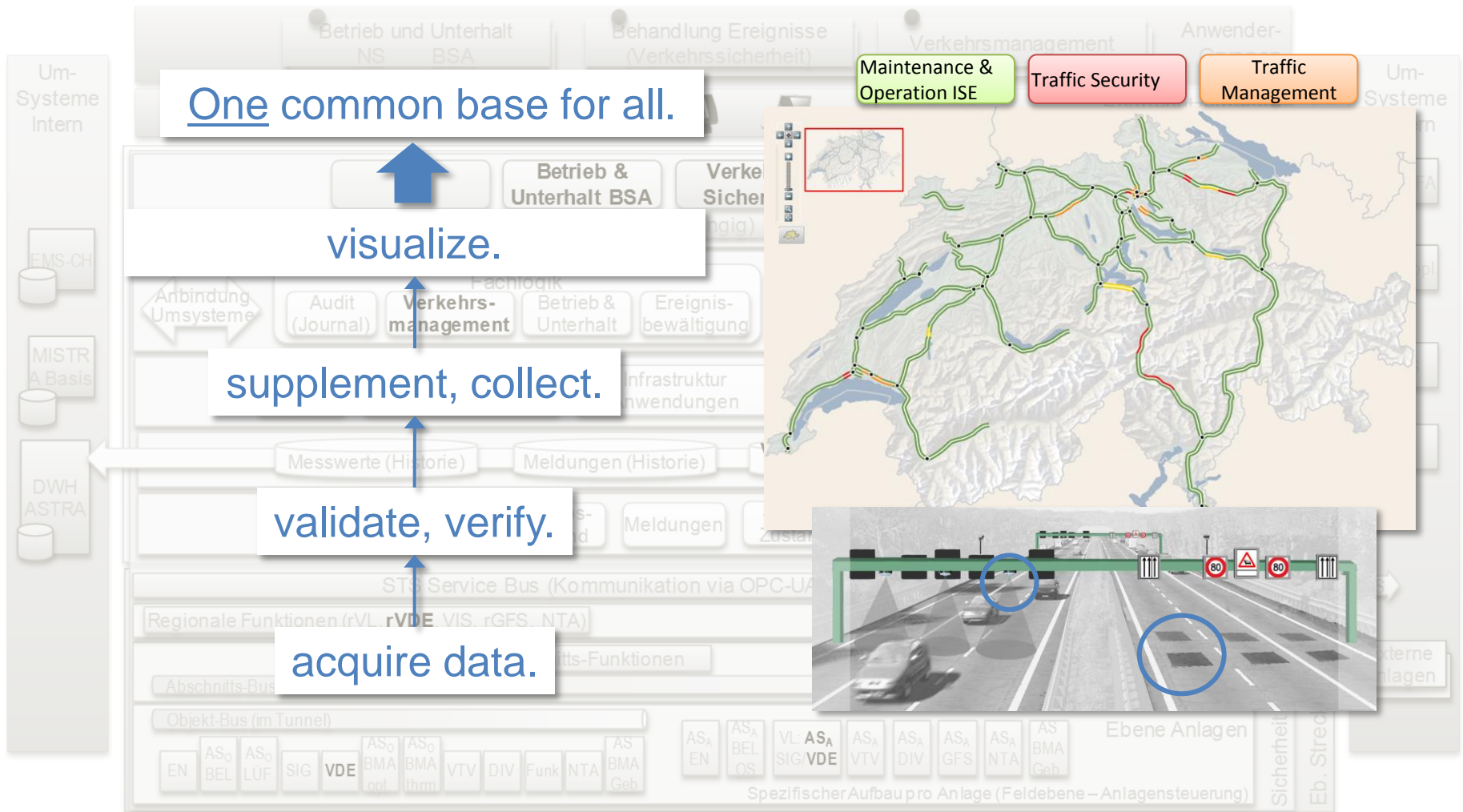
Typ	Priorität	Datum / Zeit	AKS-Code	Zustand	Meldezeit
Neue ...	erfolgreich	erfasst.			

Traffic Management Highways Switzerland

Standards SA-CH: technical Interfaces



Example: Traffic information

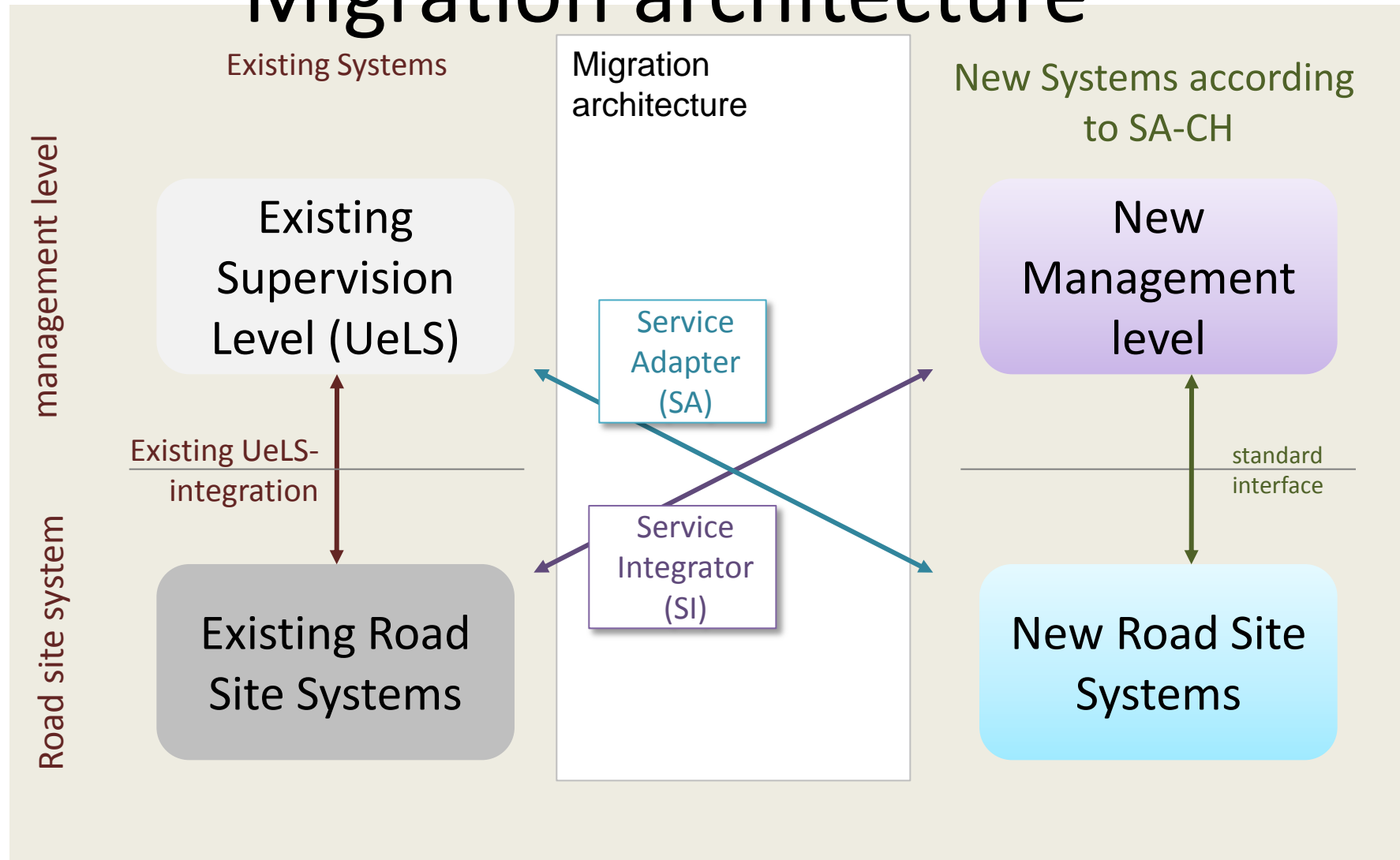


Standards: What to standardize?

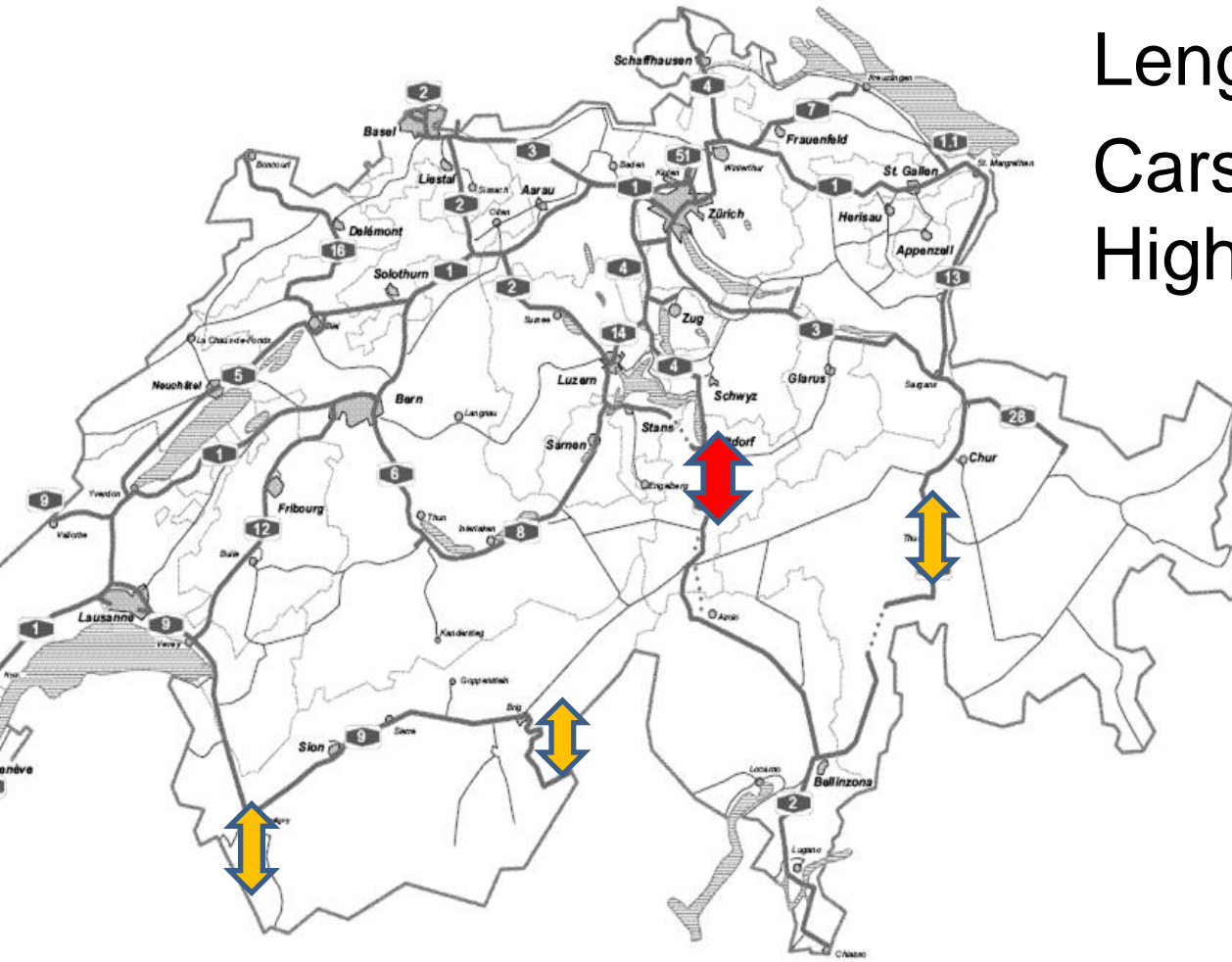
- **Functional requirements**
 - High degree of standardization
- **Interfaces between deliverables of different contractors**
 - High degree of standardization (goal: compatibility)
- **Interfaces of exchangeable items (spare parts)**
 - High degree of standardization (goal: compatibility)
- **User interface**
 - High degree of standardization
- **Internal design, internal interfaces**
 - No standardization

Approach & Implementation SA-CH

Migration architecture

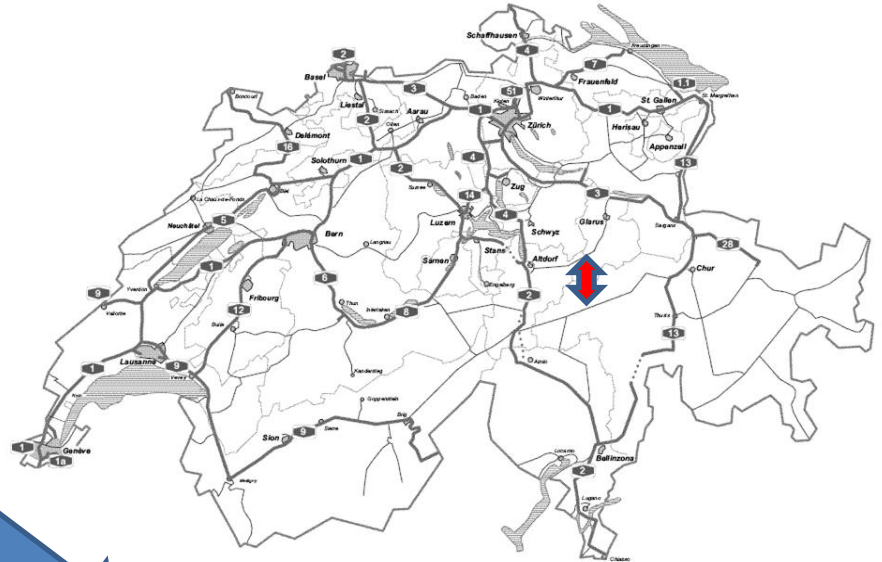


Gotthard Tunnel (GST)



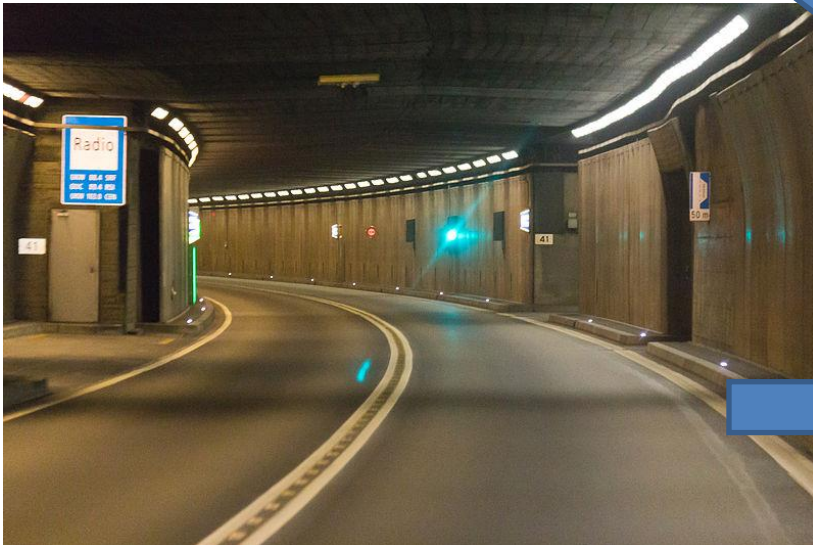
Lenght	16'918 m
Cars / Day	17'278
High d	36'000

Gotthard Tunnel (GST)

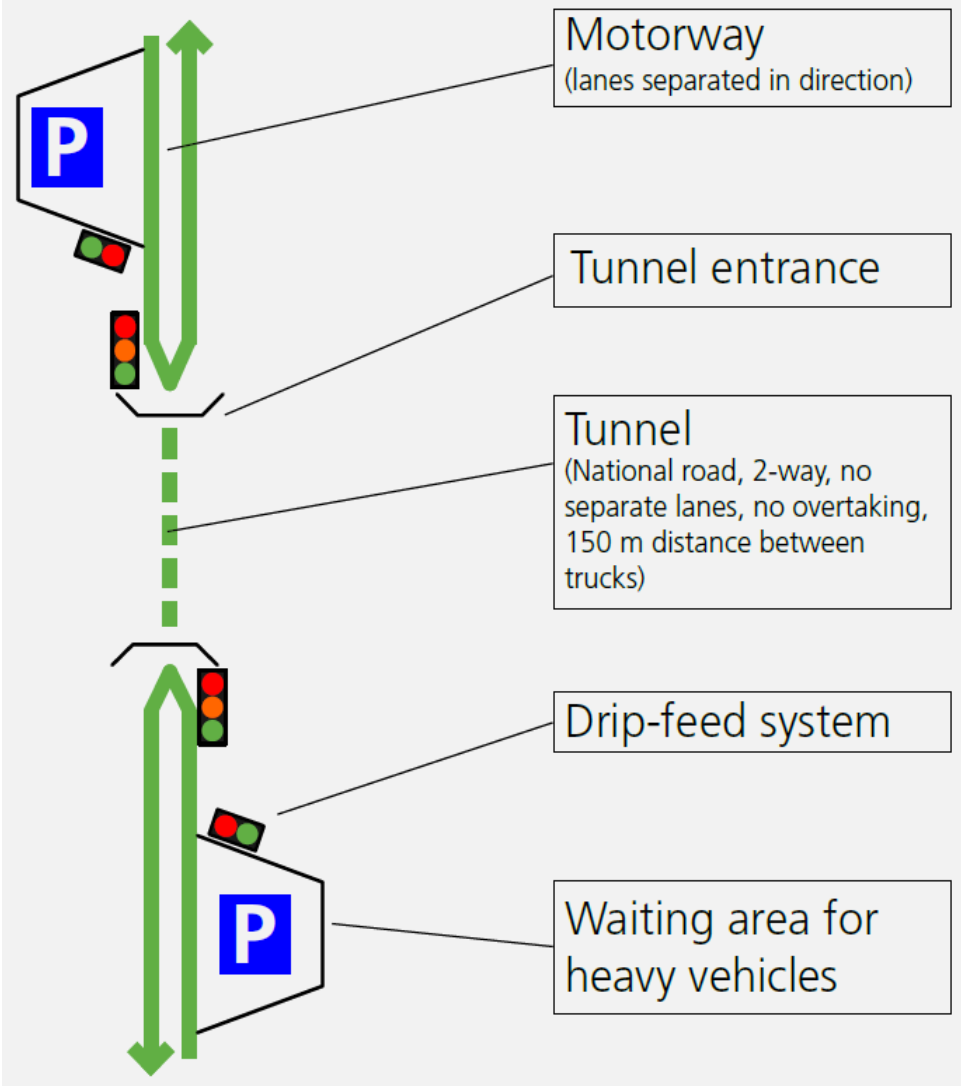


accident 2001

challenge 2020:
revision of GST
Closure for >3 years



Gotthard Tunnel 2001



Drip feed for Heavy goods traffic management

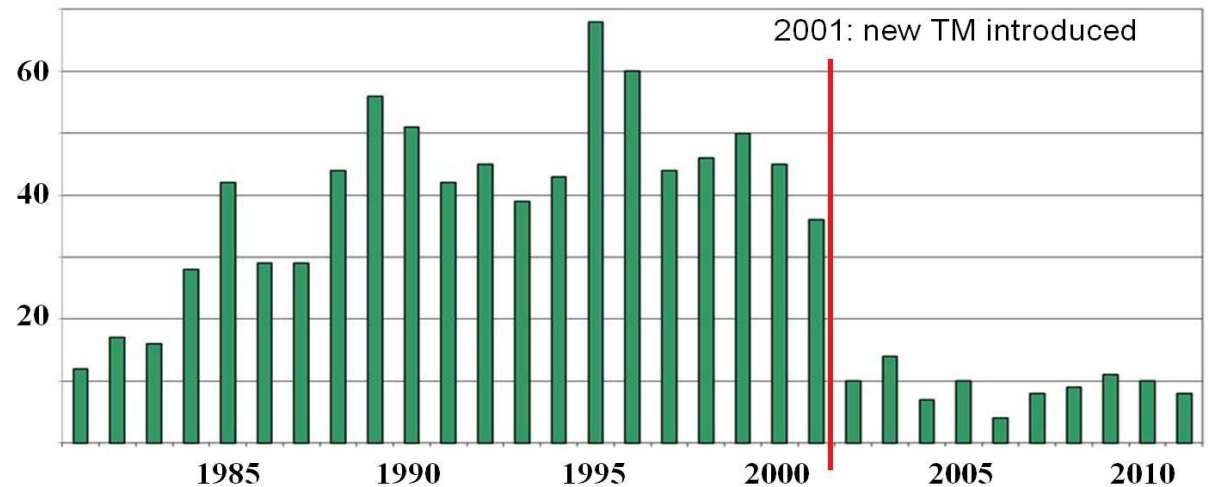
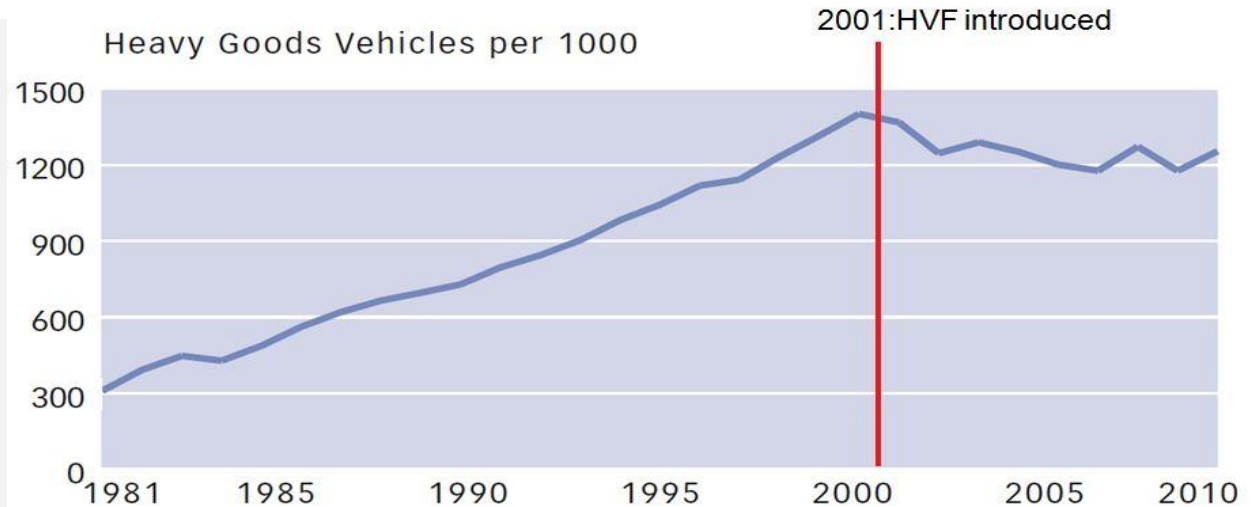
Thermo Portal



GST 2001: Objective achieved

HGV traffic
stabilised

Accidents
Reduced
by 75%



GST revision between 2020 - 2030

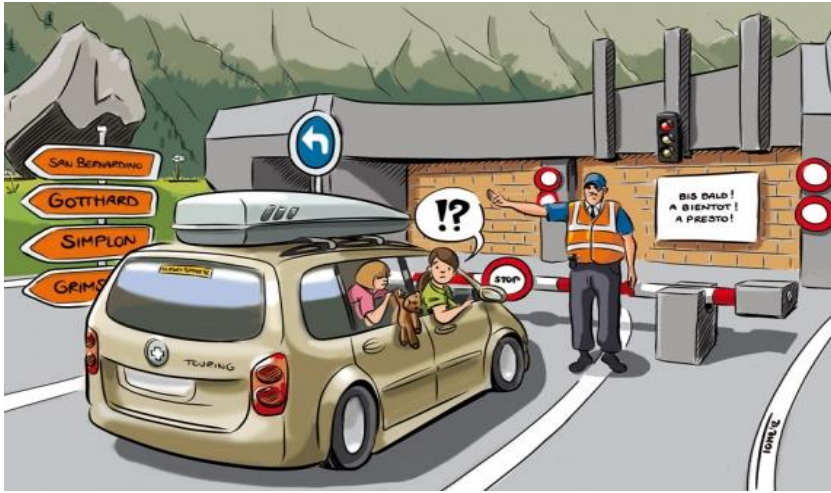


Possibilities

- construction of a 2nd Tunnel – revision after that
- Closure Tunnel
 - needs Traffic Management solutions

Decision in 2015

Traffic Management / combined Train solutions



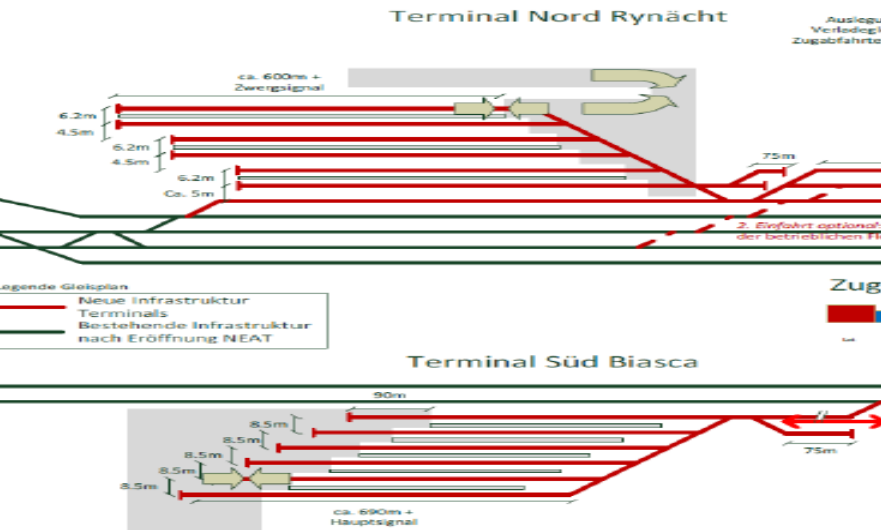
Information

- pre trip for all axes accross the alps
 - Internet
 - other devices
- on trip information
- reactivate train-solutions in the old Gotthard train tunnel



Taxes?

GST revision 2020



SHORT – „ROLA“

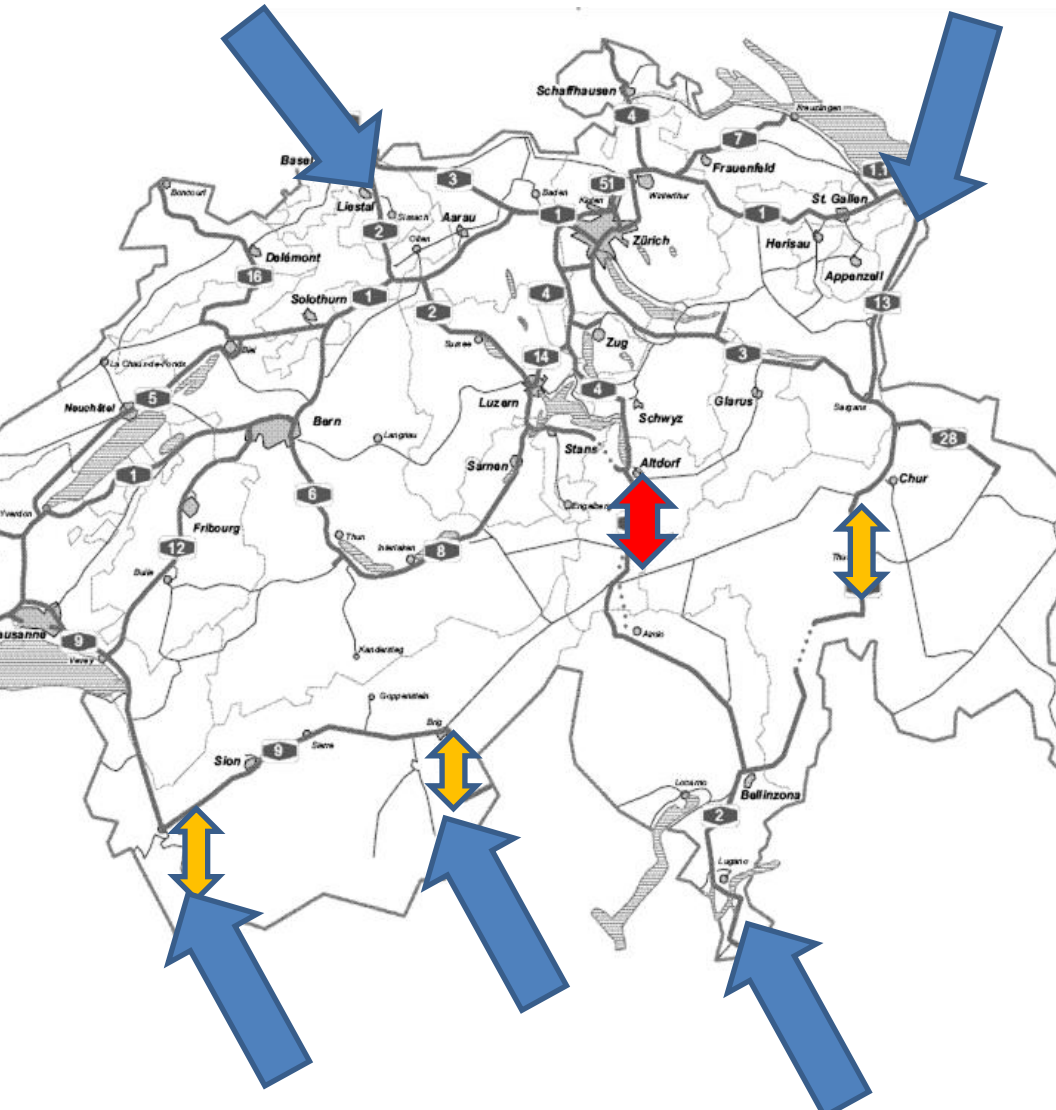
- new train tunnel of Gotthard
- High Performant Terminal
- new Trains

Regulation Traffic:

- Drip feed for Heavy goods traffic management on the other axes
- Reservation Systems
- Information Systems
 - Pre Trip
 - On Trip

Taxes?

Gotthard Tunnel needs ITS



Information

- Pre trip
- individual
- from north and from south
- variable ways
- train / road

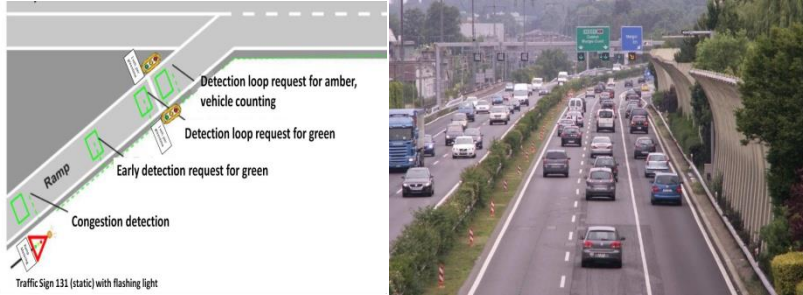
Terminals

- high efficiency solutions
- 3 trains / direction

Planification / Organisation

- Logistic
- Reservation Systems

Traffic Management Conclusion



Traffic Management

- daily traffic
- different projects

System Architecture

- harmonisation
- ready for the future

Gotthard Tunnel

- simple solutions – great effects
- big issue



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Thank you for your attention



UNA EMPRESA DEL GOBIERNO DE LA CIUDAD

