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Federal Department of the Environment,
Transport, Energy and Communications
Federal Office of Transport

Detection of derailment in Switzerland

13.10.2014 Colin Bonnet

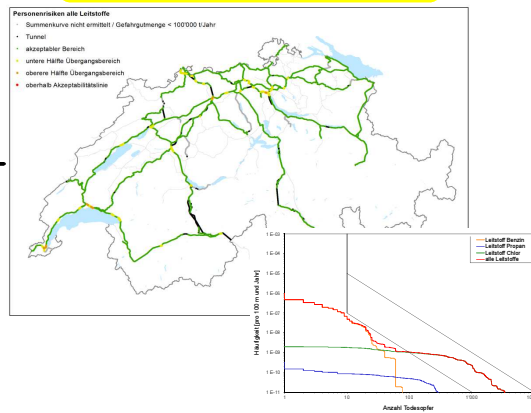
Risk analysis

Rail infrastructure
Open track, tunnels,
stations, marshalling yards

Rolling stock
Passenger trains
Freight trains incl.
dangerous goods

Surroundings
Population
Environment

Risk



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Acceptable risks today but...

Significant progress achieved in last years

- risks taken into account by main actors
- many safety measures taken
- current risk is considered acceptable



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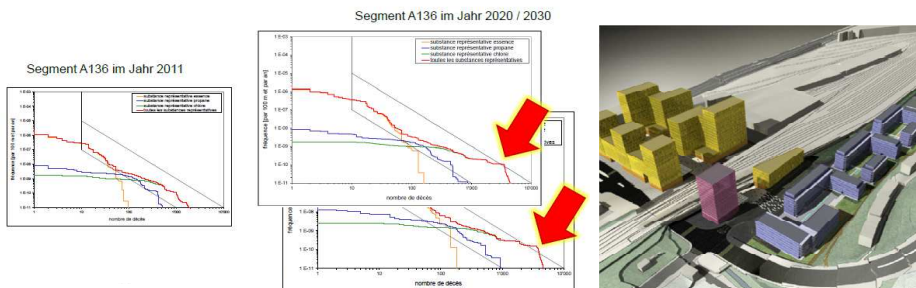


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Risk is increasing due to growing population and transported goods

Potential solutions:

- reduction of transport needs (on site production, etc.)
- safety measures on rolling stock
- ...



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History of DDD in Switzerland

Agreement Chemical industry / SBB / Government
→ 623 wagons equipped with EDT100 (2002)

Sensitivity problems require development → EDT101

Several initiatives lead to equipment of > 1000 wagons with
EDT 101: Wascosa, RhB, BLS,...

SBBCargo: 1-2 DDD-tripping/year. These cases indicate
defects of infrastructure, helping improving its safety

WASCOSA tank cars

- 800 wagons equipped with EDT101
- no significant technical problem
- costs: 1'200 EUR/new wagon (retrofit 2'200 EUR/wagon)



WASCOSA tank cars

DDD avoids large catastrophes but also reduces significantly the costs of smaller incidents



with DDD 7'100 EUR



without DDD 119'600 EUR



with DDD 6'800 EUR



without DDD 32'800 EUR

Costs for repair of Wascosa wagons **only!**

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Car transport BLS



- 138 wagons
- EDT 101 since 2008
- 600'000 km/year



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Car transport BLS

- no significant technical problem
- very few tripping cases in first years, at locations where infrastructure presented defects
- similar initiative by RhB (narrow gauge)



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Conclusions

Solutions required to maintain risks of dangerous goods transports at acceptable level

Technical developments and extended experiences of the past years allow to see the detection of derailment as a reliable, largely available and economically positive way of avoiding catastrophic consequences of freight train derailments.

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