CFD - 3D numerical simulations (extract)

Year	Project	Software	Country
2014	**Bärenburg Tunnel** Prediction of smoke and pollutant spread with regard to a risk analysis	Fire Dynamics Simulator (FDS)	CH
2014	**Krohnstiegtunnel** Prediction of smoke and pollutant spread with regard to a risk analysis	FDS	DE
2014	**Galerie Dormagen** Prediction of smoke and pollutant spread with regard to a risk analysis	FDS	DE
2014	**Ovit Tunnel** Validation of tunnel ventilation concept in an emergency scenarios: jet fans and point smoke extraction	FDS	TR
2013	**Förbifahrt Stockholm** Prediction of air flow in the vicinity of the air exchange stations, optimisation of air flow approaching the fans.	Ansys CFX	SE
2013	**Giessbach Road Tunnel** Prediction of smoke temperatures in the exhaust duct during smoke extraction	Ansys CFX	CH
2013	**Eastern Bypass Basel** Prediction of temperatures at the ceiling of the noise-protection enclosure for various fire scenarios as a design basis for civil and M+E designers	Ansys CFX	CH
2012	**Solar modules** Calculation of pressure loads of solar modules exposed to various ambient wind conditions	Ansys CFX	CH
2012	**A1 Jerusalem Railway Tunnels** CFD simulation of aerodynamics in 4 tunnels and an underground railway station, validation of tunnel ventilation concept, jet fans and smoke extraction, emergency egress simulation	FDS	IL
2012	**North-West Bypass Meran** Verification of jet-fan efficiency and smoke dispersion for an alternative civil design	Ansys CFX	IT
2012	**Parking Chapelle** Verification and optimization of the mechanical smoke extraction system	Ansys CFX	CH
2011	**Road Tunnel Wesertunnel** CFD Simulations for emergency scenarios as part of the ADR risk analysis for dangerous goods transports	FDS	DE
2011	**Concert Hall Zürich** Calculation of fresh air and temperature distribution, ventilation driven by various heat sources	Ansys CFX	CH
2011	**Road tunnel Bochum – Grumme** Prediction of smoke and pollutant spread with regard to a risk analysis (12 runs)	FDS	DE
2010 – 2011	**Car park and tunnel system Koe-Bogen** Analysis of smoke spread in a car park access with regard to natural and mechanical ventilation	Ansys CFX	DE
2010	**Road tunnel Route des Nations** Analysis of smoke propagation with and without mechanical ventilation in a highly sloped tunnel	Ansys CFX	CH

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Year	Project	Software	Country
2010	**Road tunnel Brisbane** Prediction of temperature evolution in the exhaust duct regarding multiple scenarios	FDS	AU
2010	**Road tunnel Dissen** Analysis of temperature evolution in case of fire within a standard cross-section and a partially open cross-section	FDS	DE
2010	**Road tunnel Wesertunnel** Prediction of smoke and pollutant spread with regard to a risk analysis (15 runs)	FDS	DE
2009 – 2010	**Road tunnel group N5 Neuchâtel** Analysis of aerodynamic links smoke propagation in between two subsequent tunnels or partially associated tunnels with and w/o mechanical ventilation	FDS	CH
2009 – 2010	**M5East Filter** Design and optimization of guide vanes to homogenize the inflow of the filter equipment	Ansys CFX	AU
2008 – 2010	**Road tunnel Oppenweiler** Analysis of smoke propagation in a road tunnel of exceptional cross-section (partially open) with regard to a standard cross-section	Ansys CFX	DE
2008 – 2010	**Influencing the longitudinal airflow in road tunnels in case of fire** Federal roads office research project, analysis of the effect of air injection on the longitudinal flow (Saccardo injection)	Ansys CFX	CH
2007 – 2010	**Road tunnel Oberkassel** Verification of the natural ventilation trough a partially open roof in case of fire	Ansys CFX	DE
2007 – 2010	**Road tunnel Oberdollendorf** Verification of the natural ventilation trough a partially open roof in case of fire	Ansys CFX	DE
2006 – 2010	**CEVA Geneva** Design and verification of the ventilation concept of four underground train stations	Ansys CFX	CH
2009	**Standby set Copenhagen** Analysis of smoke and pollutant spread of a standby set downtown Copenhagen	Ansys CFX	DK
2009	**Metro Karaj** Verification of the emergency ventilation concept of the metro stations	FDS	IR
2009	**Metro Barcelona** Verification of the emergency ventilation concept of the metro stations	FDS	ES
2009	**Port access Danzig** Verification of the mechanical ventilation concept (longitudinal via jet fans)	Ansys CFX	PL
2009	**Road tunnel group Brusei** Analysis of smoke spread within a series of tunnels and avalanche screens	FDS	CH
2009	**Road tunnel Kulm** Verification of the natural smoke extraction via a vertical shaft	FDS	CH

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CFD - 3D numerical simulations (extract)

Year	Project	Software	Country
2008 – 2009	**Road tunnel Dissen** Verification of the natural ventilation concept (smoke extraction using a partially open roof)	Ansys CFX	DE
2008 – 2009	**Metro Athens** Verification of efficiency of the mechanical emergency ventilation concept	Ansys CFX	GR
2008	**Mobility hub Augsburg** Verification of the emergency ventilation concept of a tramway station (second phase)	Ansys CFX	DE
2008	**Ceneri base tunnel** Analysis of smoke spread at proximity of a smoke exhaust duct	FDS	CH
2008	**Metroproject Diabolo** Verification of the mechanical smoke extraction concept and system design in subway stations	FDS	BE
2008	**Road tunnel Croix Rousse** Verification of efficiency of the mechanical smoke extraction system (massive extraction)	FDS	FR
2007	**Mobility hub Augsburg** Verification of the emergency ventilation concept of a tramway station (first phase)	Ansys CFX	DE
2006	**Road tunnel Oberkirch-Lautenbach** Verification of the natural ventilation trough a partially open roof in case of fire	Ansys CFX	DE
2006	**Tonhalle Zurich** Optimization of the HVAC ventilation concept in a concert hall with regard to comfort criteria	Ansys CFX	CH
2005	**Train tunnel Rotterdam Noordrand (HSL Zuid)** Comparison of natural smoke extraction through dampers and through labyrinth-elements	Ansys CFX	NL
2005	**Road tunnel Nordtangente Basel** Analysis of flow configuration on a partially open bridge, being part of a tunnel system	Ansys CFX	CH
2005	**Marienplatz München** Verification of the emergency ventilation concept of a subway station, analysis of the effect of smoke curtains	Ansys CFX	DE
2004	**Road tunnel Cross City Sidney** Analysis of the complex flow pattern upstream of the four exhaust fans	Ansys CFX	AU
2004	**Road tunnel Dublin Port** Verification of the capacity of the emergency ventilation system, input for egress simulation	Ansys CFX	IE
2003	**Road tunnel Branisko** Verification of the capacity of the emergency ventilation system (extraction, design check)	Ansys CFX	SK
2001	**Road tunnel Yong Ma** Verification of the capacity of the emergency ventilation system (design check)	Fluent	KR
2000	**Road tunnel Chim Gok** Verification of the capacity of the emergency ventilation system (design check)	Fluent	KR

Year	Project	Software	Country
1999	**Train tunnel Young Dong** Verification of the capacity of the emergency ventilation system (design check)	Fluent	KR

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