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# A „risk picture“ of Switzerland

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EASp implementation / Review Summit  
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# Risk Picture(s) of Switzerland





# Same „Safety Issues“ as others





# How we developed our „Risk Picture“

- Initial „bottom-up“ assessment
- FOCA SMS
- Analysis of Occurrence and Surveillance data
- Benchmarking with regional & global sources
- Interfacing with industry SMS



Big Picture



Picasso



# Starting from „scratch“



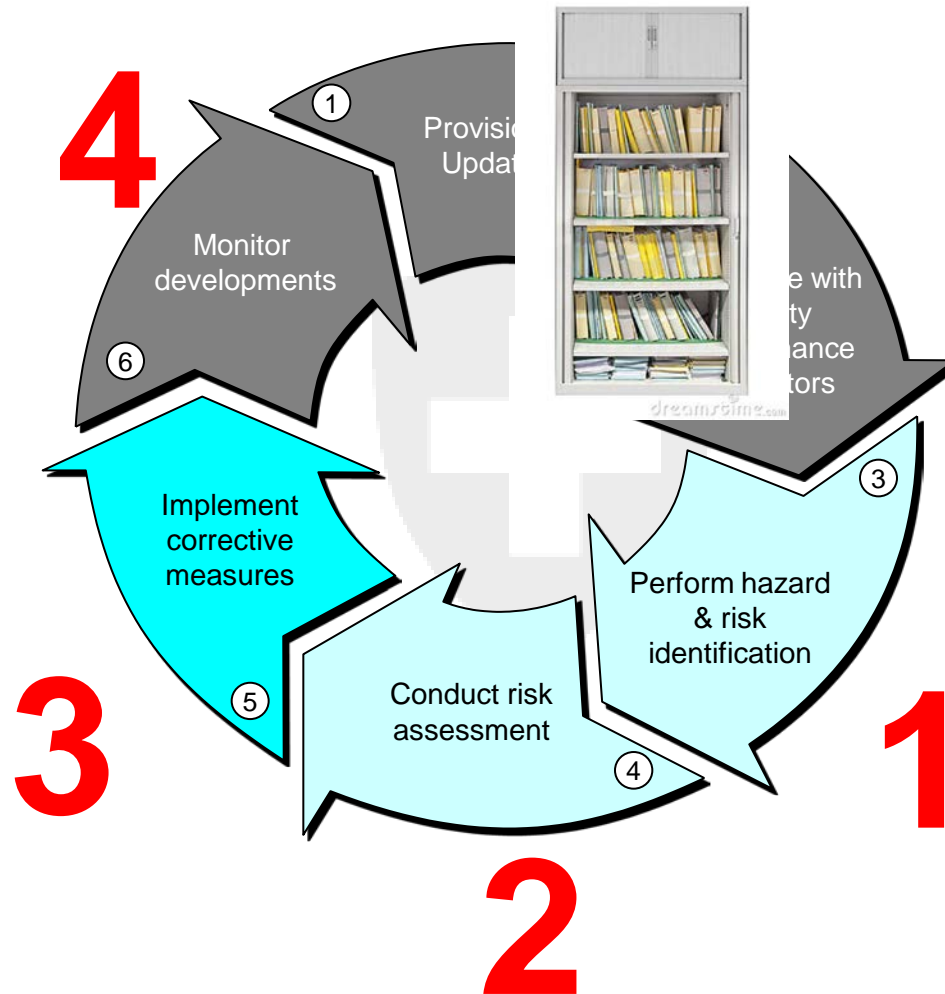
**Initial „bottom-up“ assessment :**

- **FOCA management & inspectors**
- **Brainstorming sessions, documented and refined**
- **Result = first „hazard catalog“**





# Implementation of FOCA'S SMS





# Risk Management Process

1. Hazard Identification	2. Risk Assessment	3. Actions	4. Post Mitigation Assessment																									
<p>THIS IS TO BE USED TO DEFINE THE HAZARD. THE SRM WILL FILL DARK GREY AREAS.</p> <p>Date: 29.01.2010</p> <p>Hazard Group: Blinding by laser or strong light</p> <p>Hazard Scenario: Blinding of pilot in command during take-off</p> <p>Operational Category: CAT, HELO, AD</p> <p>Hazard Causes: (Categories: Software, Hardware, Environment, Liveware, Human Factors, Interfaces)</p> <p>Hazard Consequence: (Include any existing mitigation)</p> <p>Completed By: M. Muster</p>	<p>A RISK ASSESSMENT OF THE CONSEQUENCES OF A HAZARD. ONLY DESCRIBE 1 HAZARD SCENARIO IN SRM WILL FILL DARK GREY AREAS.</p> <p>Date: 29.01.2010</p> <p>Hazard Group: Blinding by laser or strong light</p> <p>Hazard Scenario: Blinding of pilot in command during take-off</p> <p>Operational Category: CAT, HELO, AD</p> <p>Hazard Causes: (Categories: Software, Hardware, Environment, Liveware, Human Factors, Interfaces)</p> <p>Hazard Consequence: (Include any existing mitigation)</p> <p>Completed By: M. Muster</p>	<p>COMPLETE ACTIONS FOR EACH HAZARD. COPY THIS TEMPLATE ONTO THE NEXT PAGE IF A PMA NEEDS TO BE COMPLETED FOR MORE THAN 1 HAZARD SCENARIO.</p> <p>Date: 15.02.2010</p> <p>Issue (Consequence, S/F, ACC CAT)</p> <p>1. all</p> <p>2. all</p> <p>3. all</p> <p>Issue Creation Date</p> <p>1. 01.01.2010</p> <p>2. 01.01.2010</p> <p>3. 01.01.2010</p> <p>Reference Documents</p> <p>Actions Identified By</p> <p>M. Muster</p> <p>N. Muster</p>	<p>TO BE CONDUCTED ONCE THE ACTION HAS BEEN IMPLEMENTED. A POST MITIGATION ASSESSMENT MUST BE COMPLETED FOR EACH HAZARD SCENARIO. COPY THIS TEMPLATE ONTO THE NEXT PAGE IF A PMA NEEDS TO BE COMPLETED FOR MORE THAN 1 HAZARD SCENARIO.</p> <p>Date: 30.08.2013</p> <p>Specify Scenario: Blinding of pilot in command</p> <p>Actual Impact of Action on Hazard Scenario</p> <p>Since 2009, steady increase in the number of occurrences. However, no hazardous impact on operation was observed so far. Although numbers 2012 indicate decrease of incidents (from 192 in 2011 to 140), hazard not fully resolved yet.</p> <p>Consequences (Identified under the Hazard Scenario)</p> <table border="1"><thead><tr><th>Consequences</th><th>Sev</th><th>Freq</th><th>Risk Ranking</th><th>ACC CAT</th></tr></thead><tbody><tr><td>Go around</td><td>E</td><td>3</td><td>L</td><td>TO-LA</td></tr><tr><td>Temp. loss of control</td><td>C</td><td>2</td><td>M</td><td>LOC</td></tr><tr><td>Physical injury of crew</td><td>U</td><td>4</td><td>M</td><td>IAD</td></tr><tr><td>Take-off abortion</td><td>D</td><td>2</td><td>M</td><td>TO-LA</td></tr></tbody></table> <p>Are there any new consequences as a result of the action?</p> <p>No</p> <p>Recommended PMA Risk Acceptability? Tolerable</p> <p>Managements Decision Tolerable</p> <p>Reason: Actions have been implemented and risk is now ALARP.</p> <p>Status of Hazard: Monitored</p> <p>Head of SRM Authorisation: H. Muster</p> <p>Date: 30.08.2013</p> <p>Hazard and Risk Register Updated: Yes</p> <p>Date: 02.09.2013</p> <p>Participants in the Post Mitigation Assessment: M. Muster, N. Muster</p> <p>Risk Acceptability is UNACCEPTABLE – A further Risk Assessment is required.</p>	Consequences	Sev	Freq	Risk Ranking	ACC CAT	Go around	E	3	L	TO-LA	Temp. loss of control	C	2	M	LOC	Physical injury of crew	U	4	M	IAD	Take-off abortion	D	2	M	TO-LA
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## ICAO based „risk“ criteria

# ARMS







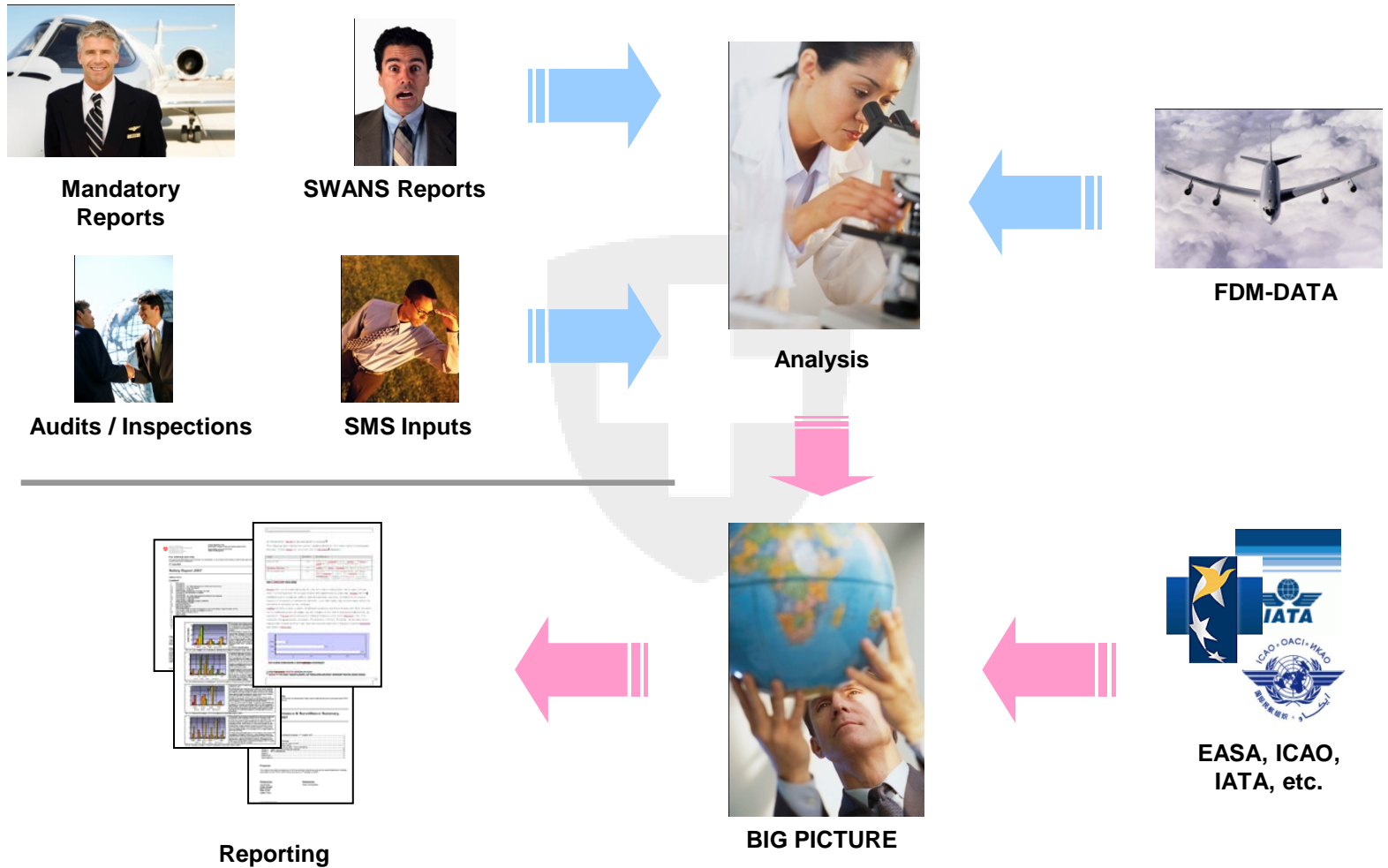
# Developing interfaces with industry SMS



- Exchange of high level safety issues
- Exchange of safety performance related data (SPI)

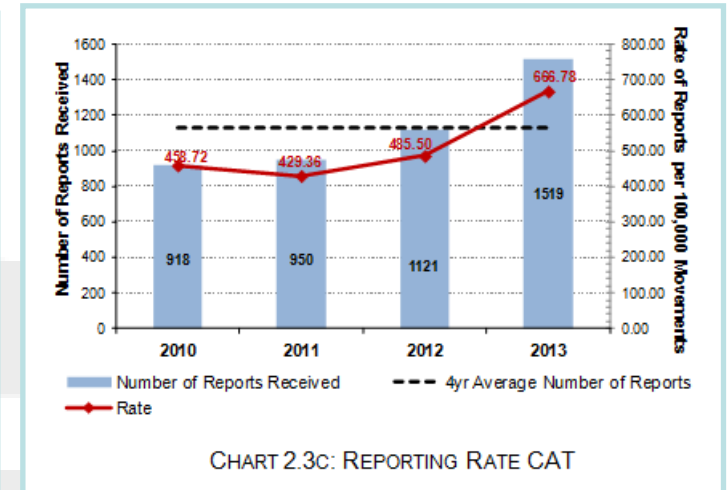
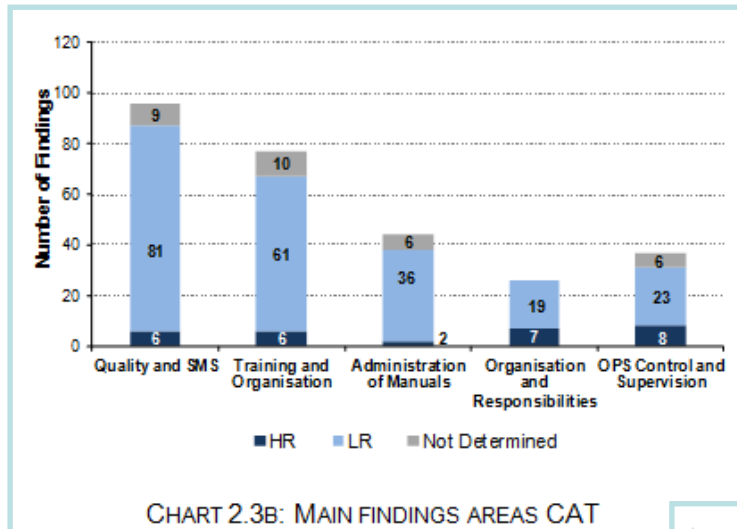


# Bringing it all together...





# Data based risk pictures...



- Occurrence data
- Audit / inspection data
- Trending
- Benchmarking

	2010		2011		2012		2013		1YR	4 YR
	HR	LR	HR	LR	HR	LR	HR	LR	TREND	TREND
ACAS*	0	51	0	44	0	59	1	67	→	↗
AIRPROX	20	27	33	29	28	8	24	10	→	→
AIRSPACE INFRI	45	297	38	288	22	259	22	225	→	→
FACILITY	3	18	5	11	2	14	3	20	↗	↗
INADEQUATE SEP	0	5	9	27	7	11	12	13	↗	↗
LEV/EL BUST	4	37	2	34	4	43	8	38	→	→
NEAR CFIT	3	2	2	1	0	2	0	2	+	+
FLOC	0	32	1	46	2	51	2	46	→	→
PROCEDURE	14	83	9	92	9	128	17	113	→	→
RWY EXCURSION	0	1	1	2	1	3	1	0	+	+
RWY INCURSION	4	36	5	70	3	51	9	50	→	→
SEPARATION INF	0	31	11	53	13	80	15	113	↗	↗
TECH SG	1	42	0	32	3	31	0	29	→	→

TABLE 2.6E: OCCURRENCES TREND ANS



# Process based „risk picture“...

CAT				
1	HIF 13-001	05.04.2013	Laser_Attack	
2	HIF 13-004	01.05.2013	Volcanic_Ash_Encounter	
3	HIF			
4	HIF			
5	HIF			
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100	HIF			


## Hazard/Risk Reg

(Domain s

**Hazard/Risk Register**  
(Domain specific)



# Where are we going?



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

## Helicopter Hazards

Information in Helicopter Hazard and Risk Register Last Updated: 16-01-2014

Federal Department of the Environment, Transport, Energy,  
and  
Communication DETEC  
  
Federal Office of Civil Aviation FOCA  
Safety Risk Management

### CURRENT STATUS

Hazard Group

Action\_of\_Individuals

Hazard

Blinding\_by\_Laser\_or\_Strong\_Lights

Hazard Scenario

Blinding PIC during landing

HIF Number of Hazard

HIF 13-001

1 Hazard Group

Action\_of\_Individuals

2 Hazard

Blinding\_by\_Laser\_or\_Strong\_Lights

3 Hazard Scenario

Blinding PIC during enroute

HIF Number of Hazard Scenario

HIF 13-001

Assessment

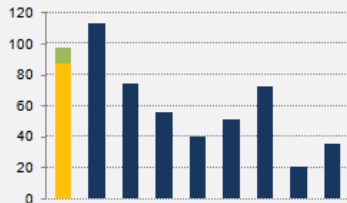
Risk Assessment

YR

All Years

Note: To view the different assessment stages on the risk matrix for a particular Hazard descriptor, select the descriptor and the others must be on none. Otherwise the info for the descriptor will be shown

1 Hazard Group



Cat	Haz	Major	Minor	NSE	
A	B	C	D	E	
Frequent	5				
Occasional	4				
Remote	3				
Improbable	2				
Elimprobable	1				

- Graphical presentation of hazards
- Improved analysis capability with increasing quality of information
- Trending capability
- Inclusion in routine internal reporting







# „A“ risk picture of Switzerland ?





«stay safe!»

([www.bazl.admin.ch](http://www.bazl.admin.ch))



**A risk picture of Switzerland**  
R. Hunninghaus, Head of SRM, 10.06.14