


Results of the project group of ISSA

Examples for technical solutions to prevent the defeating of safeguards

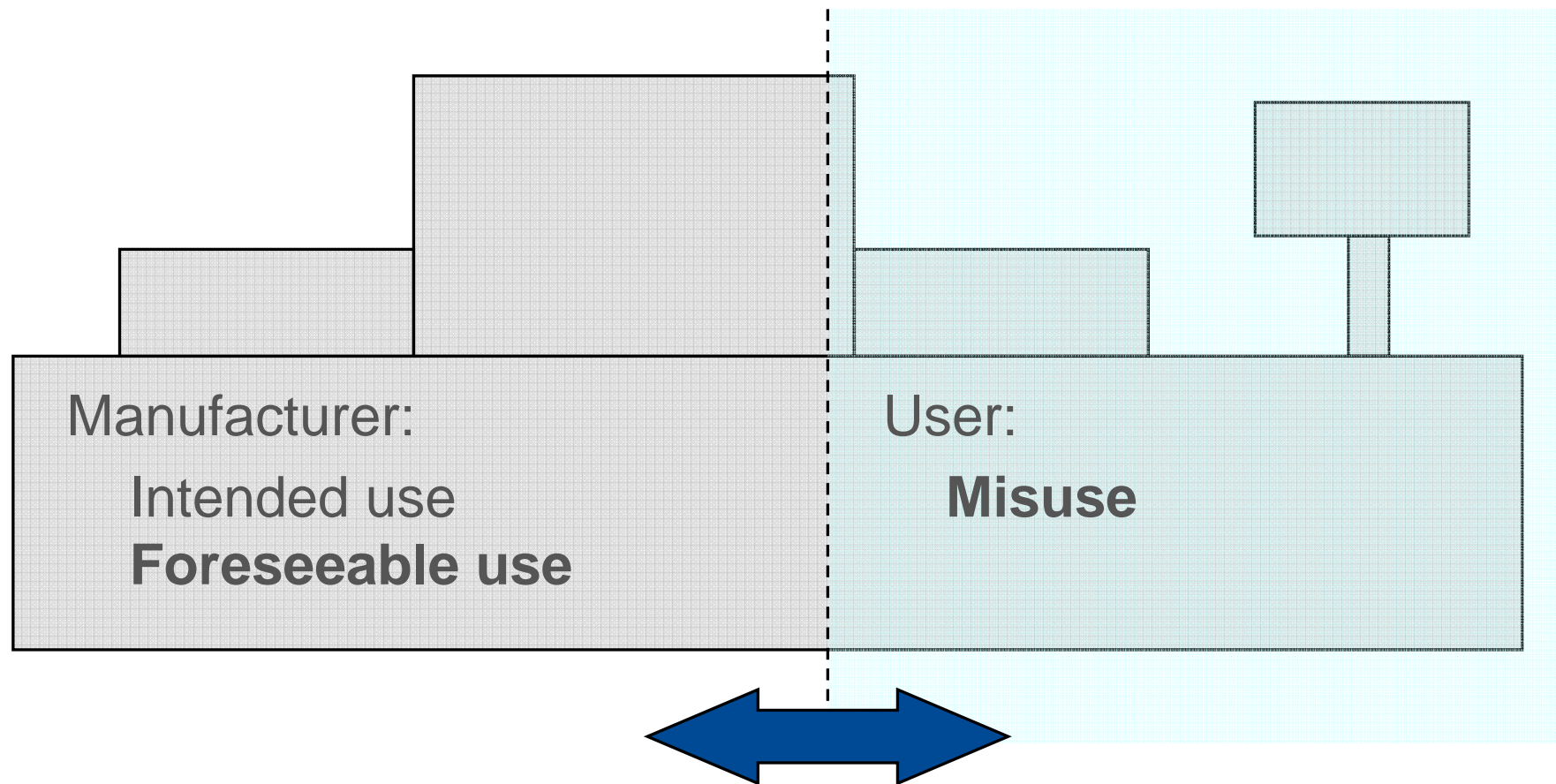


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BGN

- Statutory **accident insurance**
 - One of five mandatory insurances within the German social security system
- About 3,4 million employees in over 400.000 companies
 - Foodstuffs industry
 - Breweries and beverage industry
 - Bakery
 - Hotels
 - Restaurants

Responsibility of manufacturer and user



Approaches to prevent defeating

→ When buying **new machines**:

- **Dialogue** between manufacturer and user
- Plan and describe all operating modes, including setting up, trouble shooting, cleaning, ...
- Involve the future operators

→ For **existing machines**:

- Check the incentive to defeat protective equipment or act when defeated protective equipment is found
- Look for **technical solutions**
- Involve the operators

Technical solutions to prevent the defeating of safeguards

1: Avoid defeating

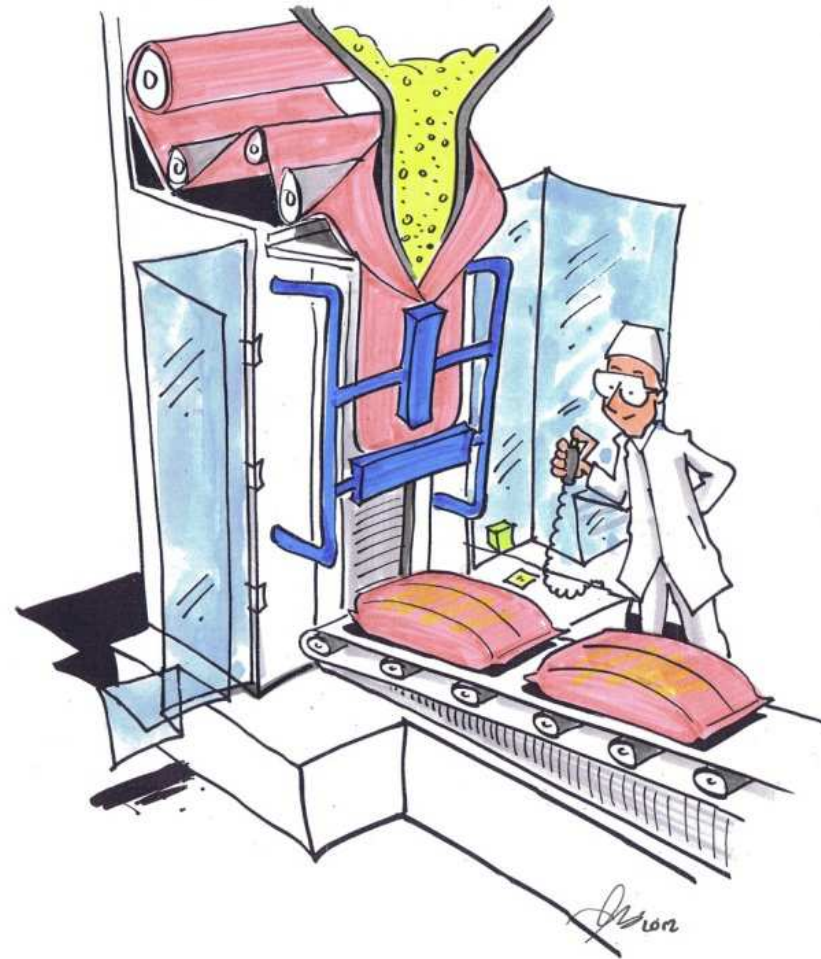
2: Make defeating more difficult

3: Detect defeating

Level 1: Avoid defeating

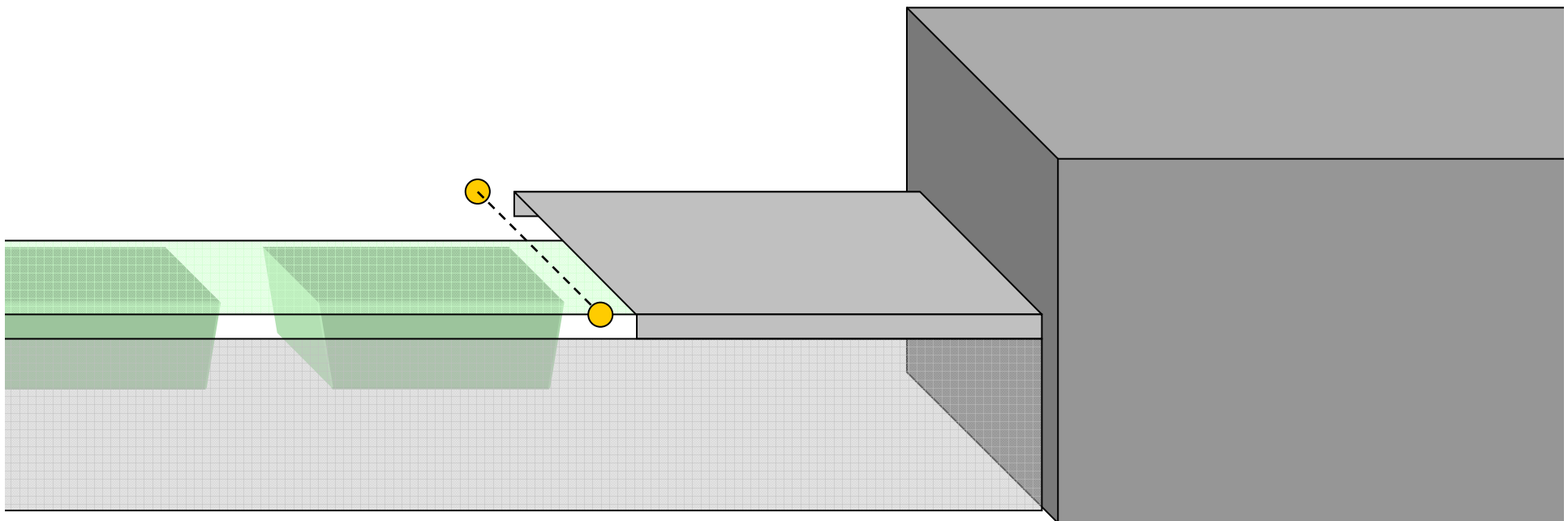
- Best solution
- **No incentive** to defeat protective equipment
- Construct the safety system in a manner, that ensures
 - Little annoyance of the user
 - Low interference of the production process

- Offer special operating modes, e. g. for setting up, with
 - Hold to run control device
 - Limited speed
 - ...



Example: Deep drawing machine

→ Intelligent safety system of the safety light barrier



Level 2: Make defeating more difficult

- Covered mounting of switch and actuator
- Interlocking devices with high coding level
- Mounting to withstand easy dismounting
 - Welding, riveting, 'one-way' screws, ...
- Additional switches
- ...



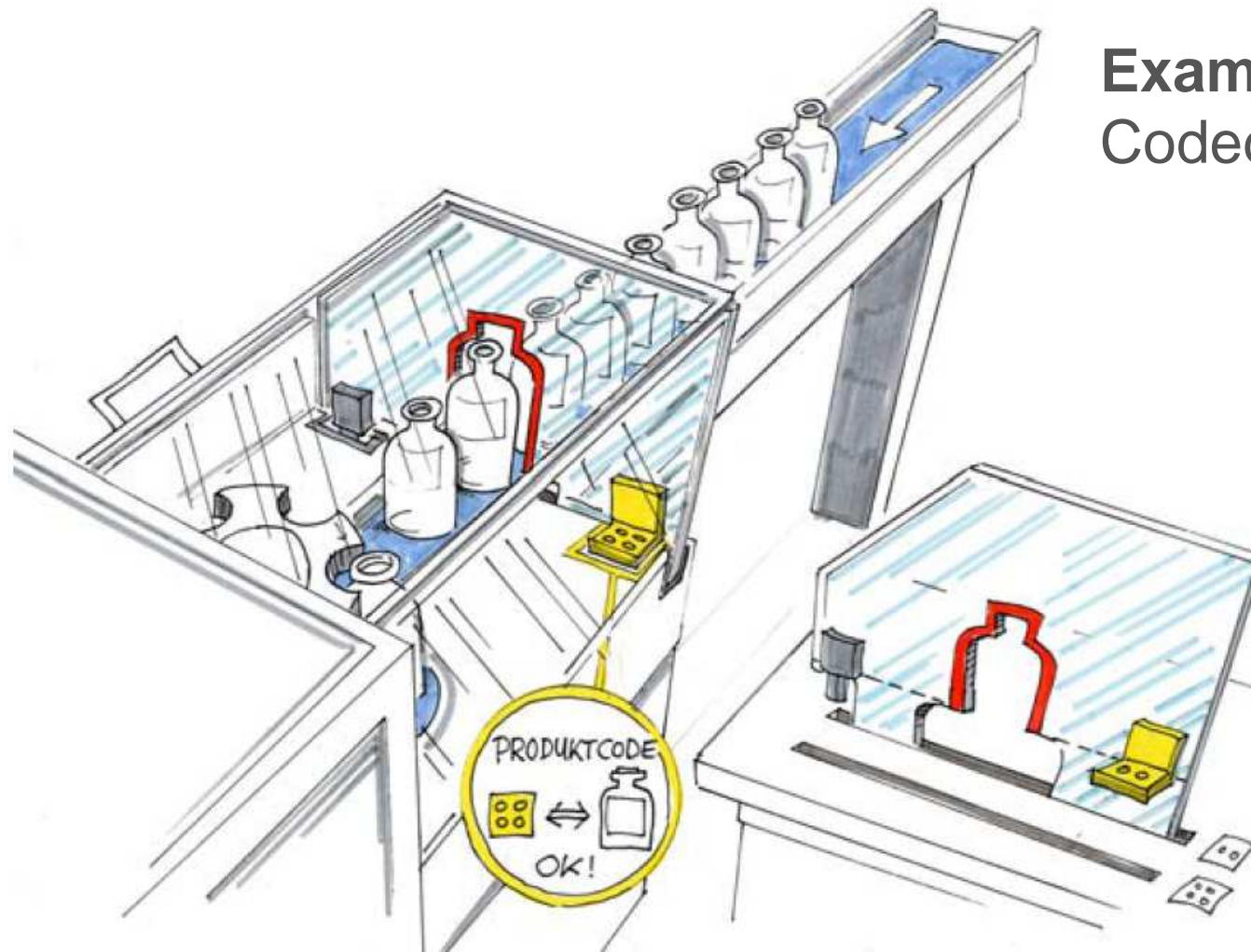
EN ISO 14119 replaces EN 1088

EN 1088 „Safety of machinery –
Interlocking devices associated with guards –
Principles for design and selection“



EN ISO 14119 „Safety of machinery –
Interlocking devices associated with guards –
Principles for design and selection“

→ Extended measures to avoid defeating



Example: Coded guards

Level 3: Detect defeating

Start up test (periodical tests):

→ Before starting, each interlocking movable guard must be opened and closed once by the operator

Plausibility checks by the control system:

→ For example, if an interlocking movable guard has to be opened for the ongoing of the process

→ Control system expects an 'open'-signal from the switch

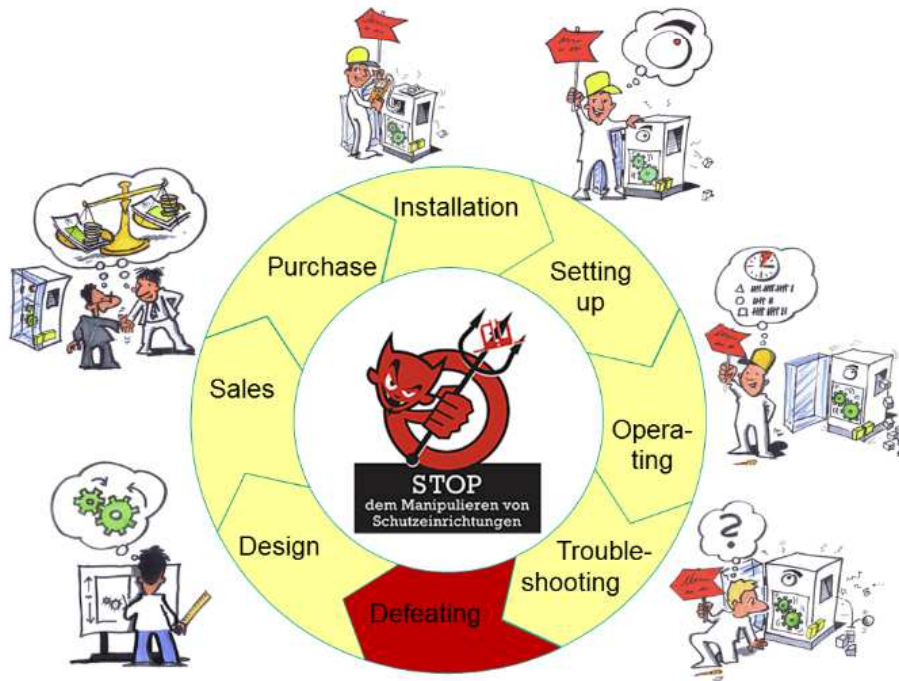
Example: Bread slicer

→ Interlocking movable guards have to be opened for the ongoing of the process



Vicious circle

Defeating of safeguards on machines causes serious accidents, high costs and restrict the availability of machines. Taking a look inside the enterprises shows: one-third of safeguards are defeated (from Report of defeating of protective devices of machinery -only available in german-). This results in thousands of accidents every year – also deadly accidents. The aim must be to prevent these accidents.



Latest Posts

last update: 13.01.2015

- New ordinance on Industrial Safety and Health enter into force in Germany on 01.06.2015
- New Edition: the manufacturer of machinery is committed by EN ISO 14119 to take measures ...
- Examples for prevent defeating

Archive

Join in!

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Good practice


At the following pages you will find a structured collection of some good practice examples.

These examples shall support manufactures in creating appropriate solutions for similar problems. They are classified as follows (click at the drawings for further information):



- New ordinance on Industrial Safety and Health enter into force in Germany on 01.06.2015
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Archive

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	
	Benefits without protective device: 0 None + Minor ++ Substantial								 IFA Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung													
	Modes of operation		Task permissible in these modes of operation? Task possible in these modes of operation? Greater use, e.g. for larger workpieces Faster, greater productivity Easier/more convenient etc. etc. Greater precision Better visibility Less physical effort Improved freedom of movement Greater freedom of movement Avoidance of interruptions Incentive to bypass for the task etc.																			
	Automatic		Manual		etc.		etc.		etc.		etc.		etc.		etc.		etc.		etc.		etc.	
1	Tasks:																					
2	Help		Help		Help		Help		Help		Help		Help		Help		Help		Help		Help	
3	Initial Operation																					
4	Program test/ test run																					
5	Setup/adjustment conversion/tooling/																					
6	Machining																					
7	Manual intervention for swarf removal																					
8	Manual change of workpiece																					
9	Manual intervention for trouble shooting																					
10	Checking/random sampling																					
11	Manual intervention for measuring/ finetuning																					

Thank you for your attention!