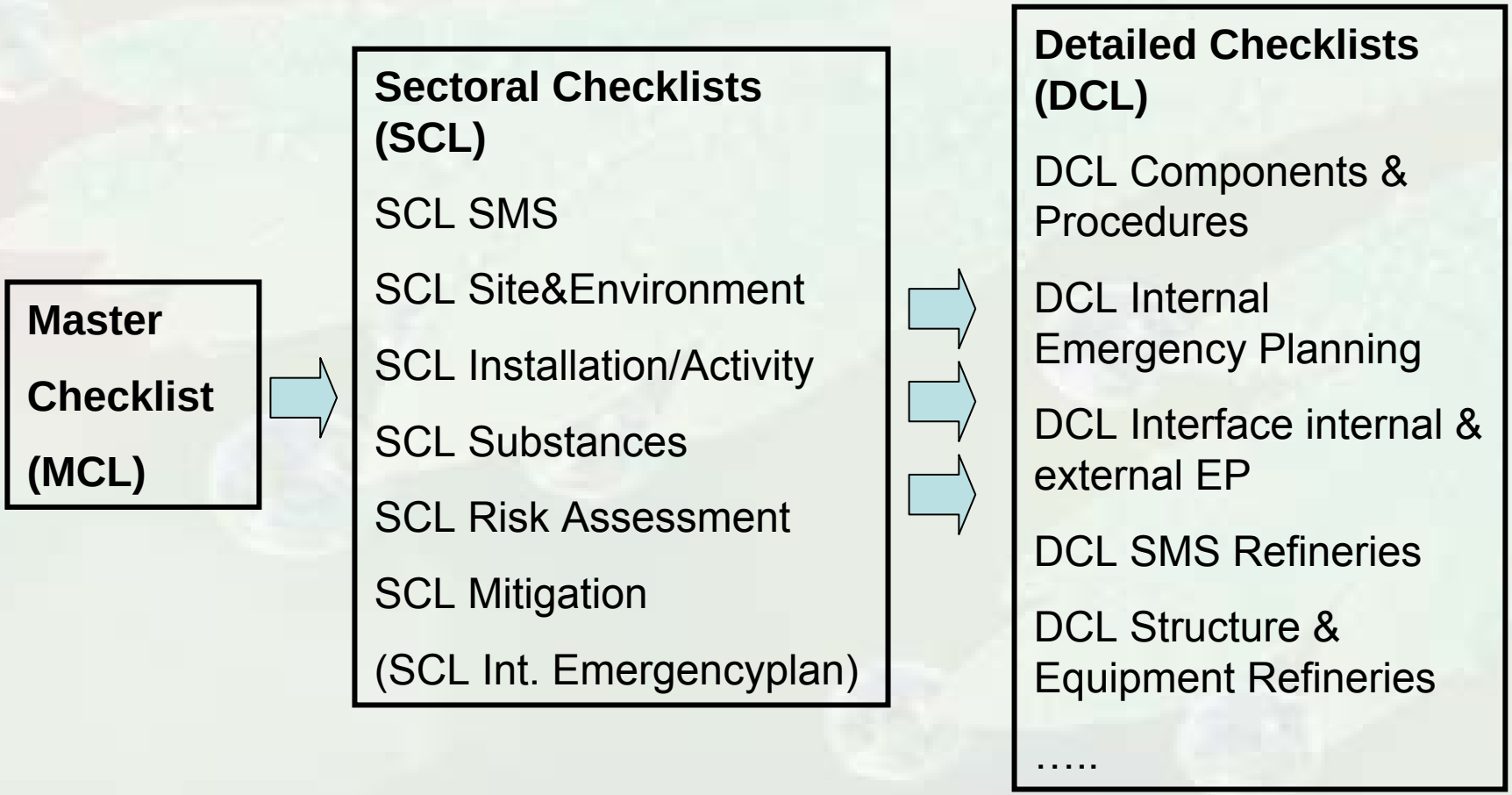
# *Checklist System for Safety Reporting*

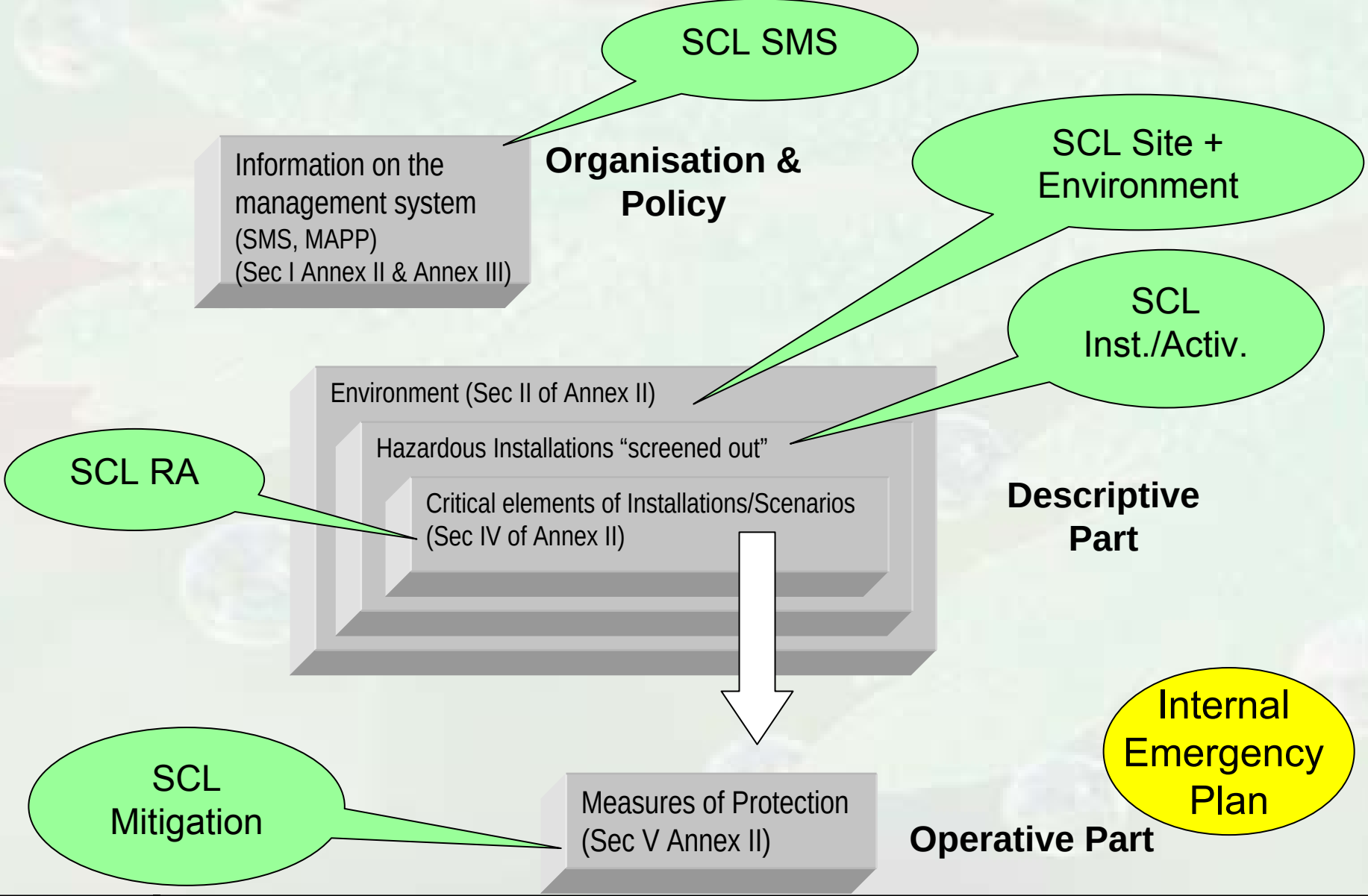
*Dr. Hans-Joachim Uth, Berlin*

UNECE

**Convention on the Transboundary Effects of Industrial Accidents**
**Assistance Programme for Eastern Europe, Caucasus and Central Asia (EECCA) and South-Eastern Europe (SEE)**

# System of Checklists






**Convention on the Transboundary Effects of Industrial Accidents**
**Assistance Programme for Eastern Europe, Caucasus and Central Asia (EECCA) and South-Eastern Europe (SEE)**

# DCL Components / Procedures

- Overfill Safety Systems
- In-plant pipeline safety
- Joint storage
- Sealing systems
- Split flows wastewater
- Transshipment
- Fire prevention strategy
- Reaction process design considerations
- Industrial plants in areas with risk of flooding
- Storage facilities
- Equipment of tanks
- Internal alarm and hazard control planning
- Plant monitoring
- Chemical reaction hazard identification

# Advantage of a Checklist-System

- CL´s are short and comprehensive
- CL´s address a limited area
- CL´s can be  performed by sectoral specialists (share workloads)
- CL´s can be evaluated separately according to similar topics (not to compare apples & pears)
- Via MCL involvement of TOP Management possible

# *Simple Score System (SSS) for Evaluation of Questionnaires* *(1/4)*

Possible answers for each questionnaire:

- Answer: yes — score = $n_y$*F
- Answer: no — score = $n_n$*F
- Answer: partly yes — score = $n_p$*F*D
- Answer: not applicable — score = $n_0$

**F** is a weight factor for the particular question and can be set between 0,1>**F**>1. Default = 1

**D** stands for the portion to what extend the question can be answered as yes, it has a value between 0,3 >**D**>0,7. Default = 0,5

# *Simple Score System (SSS) for Evaluation of Questionnaires* *(2/4)*

The average values Q of the answers are calculated as follows:

$Q_y\ [\%] = (\sum n_y * F\ /\ n\text{-}n_0\ ) * 100;$ $\quad 0 < Q_y < 100$

$Q_n\ [\%] = (\sum n_n * F\ /\ n\text{-}n_0\ ) * 100;$ $\quad 0 < Q_n < 100$

$Q_p\ [\%] = (\sum n_p * F * D\ /\ n\text{-}n_0\ ) * 100;$ $\quad 30 < Q_p < 70$

Performance Indicator **I**:

$$\mathbf{I} = Q_y + Q_p - Q_n\ ; \qquad 100 > \mathbf{I} > -100$$

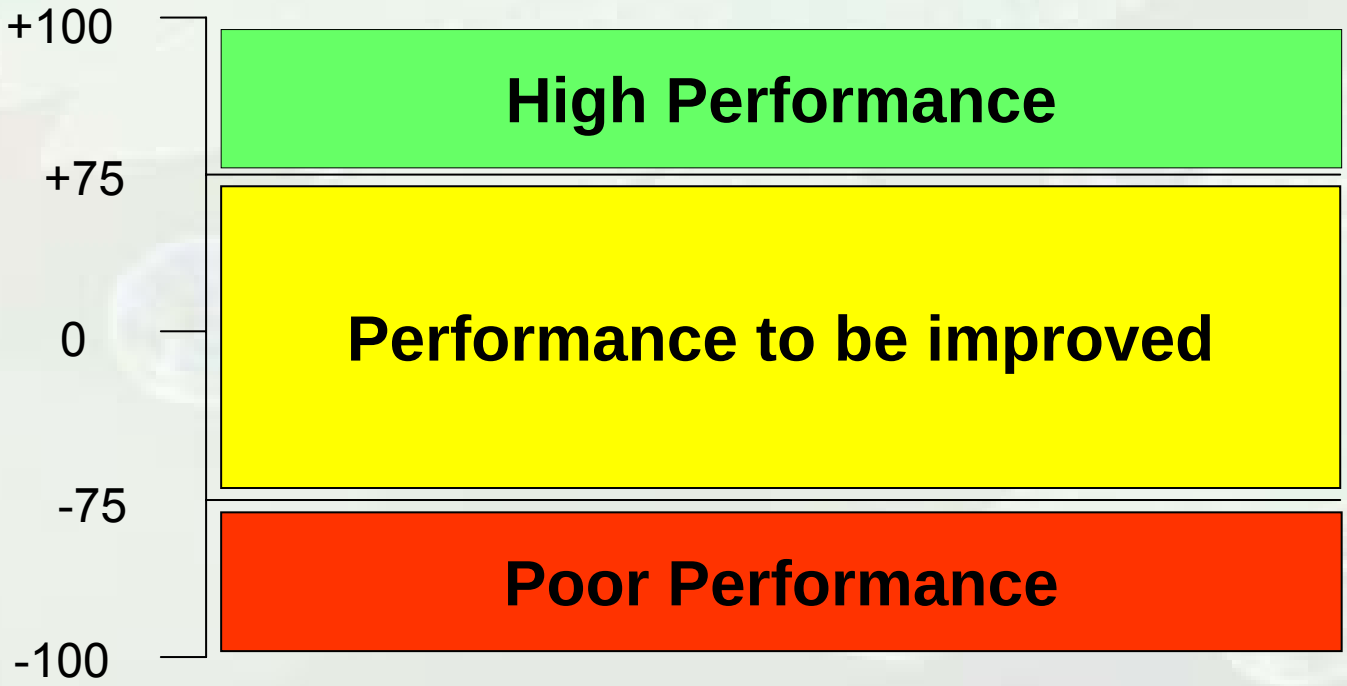
# *Simple Score System (SSS) for Evaluation of Questionnaires* *(3/4)*

| Answer: yes ($Q_y$) | Answer: partly ($Q_p$) | Answer: no ($Q_n$) | Index I |
|---|---|---|---|
| 100 | 0 | 0 | 100 |
| 80 | 20 | 0 | 90 |
| 80 | 10 | -10 | 75 |
| 50 | 50 | 0 | 75 |
| 30 | 70 | 0 | 65 |
| 80 | 0 | -20 | 60 |
| 0 | 100 | 0 | 50 |
| 50 | 25 | -25 | 37,5 |
| 30 | 35 | -35 | 12,5 |
| 50 | 0 | -50 | 0 |
| 0 | 50 | -50 | -25 |
| 30 | 0 | -70 | -40 |
| 0 | 20 | -80 | -70 |
| 0 | 0 | -100 | -100 |

Example: Different answer scenarios of a questionnaire with 100 questions (n=100), all question are applicable ($n_0$=0); Weight factor F=1; Portion factor D=0,5.

# *Simple Score System (SSS) for Evaluation of Questionnaires* *(4/4)*

## Performance Indicator I



# Contact

Dr. Hans-Joachim Uth

Expert for chemical process safety

Fasanenstrasse 48

10719 Berlin

Germany

fon +49173 619 24 11

mailto:jochen.uth@arcor.de