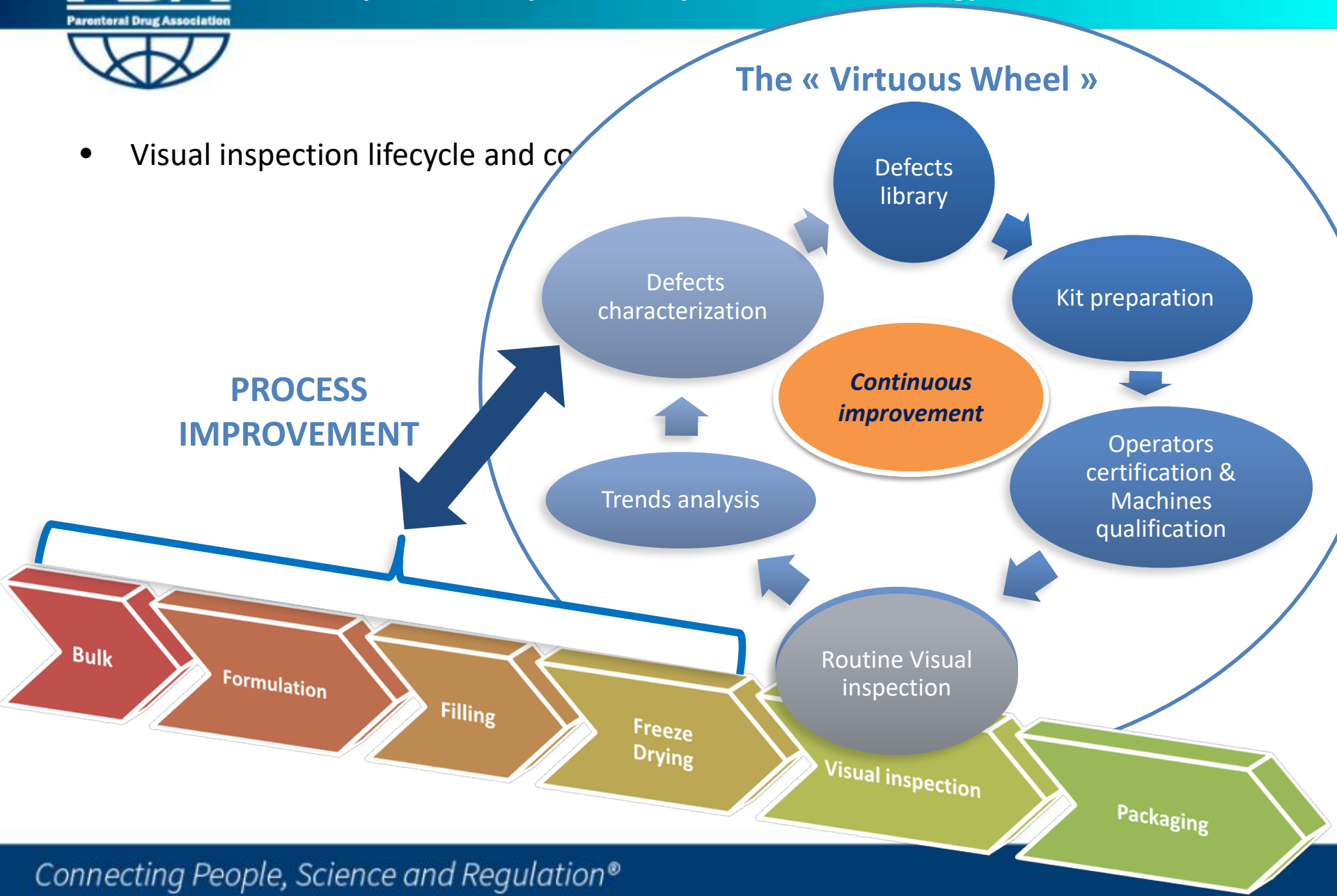


- Theory 7
- Visual inspection lifecycle and control strategy



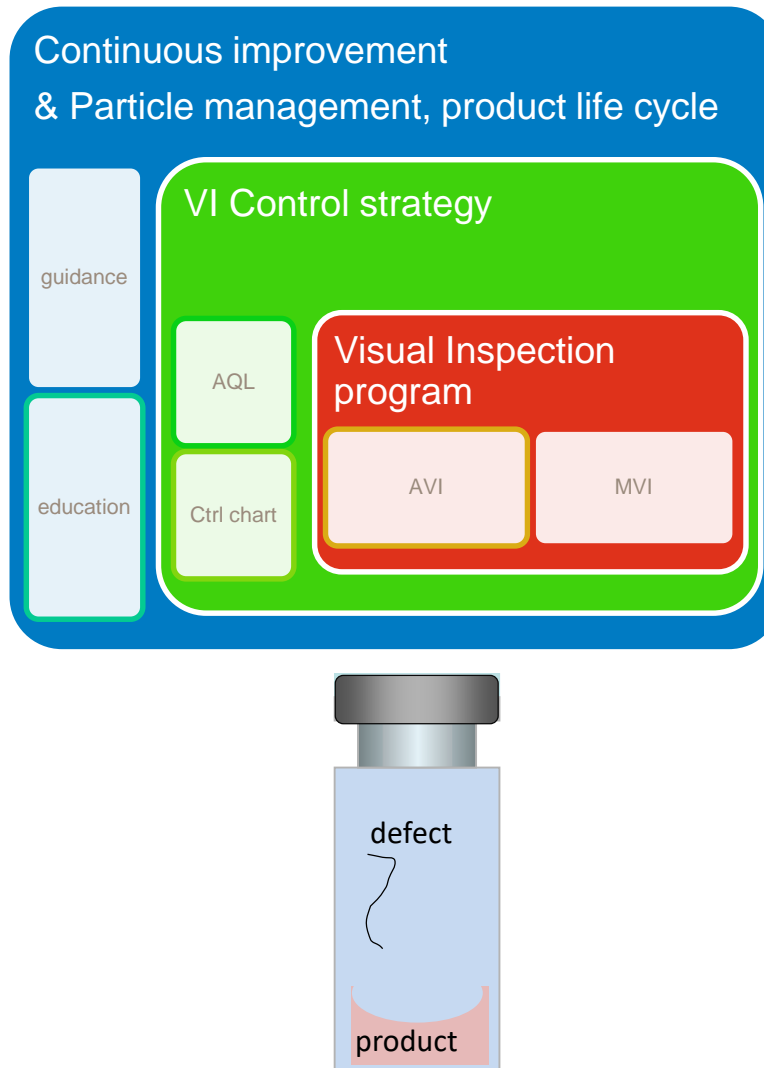
- Integration of visual inspection into overall manufacturing process
- Elements of lifecycle
- Particle identification/characterization
- Defect libraries as dynamic database
- AQL and control charting

- Visual inspection lifecycle and control strategy

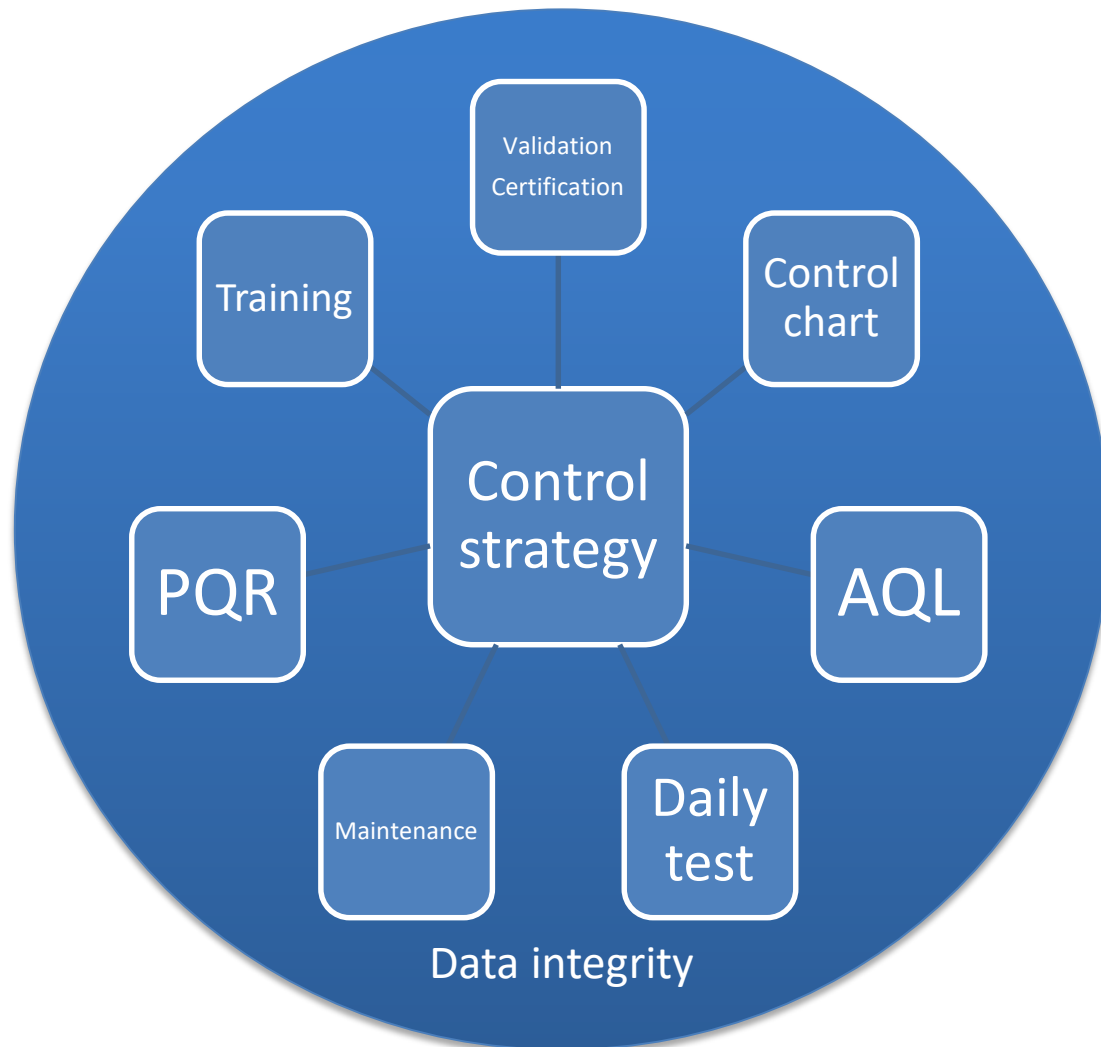
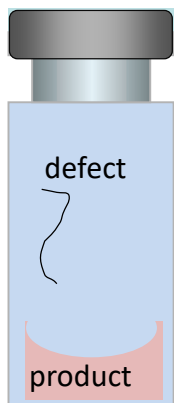


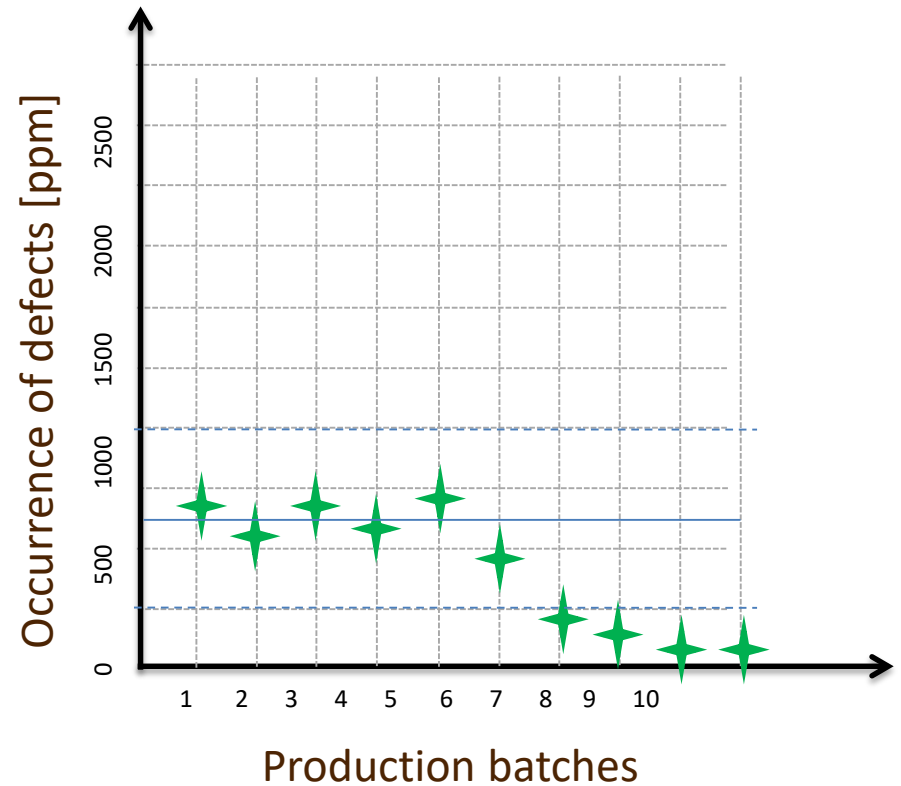
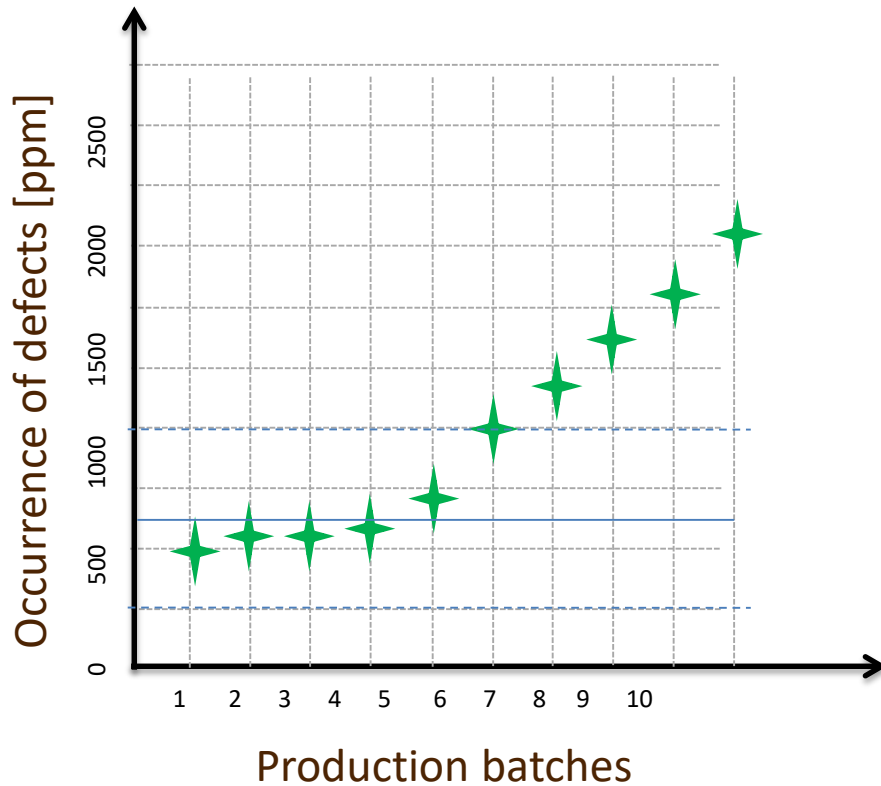
Visual inspection program in 3 layers:

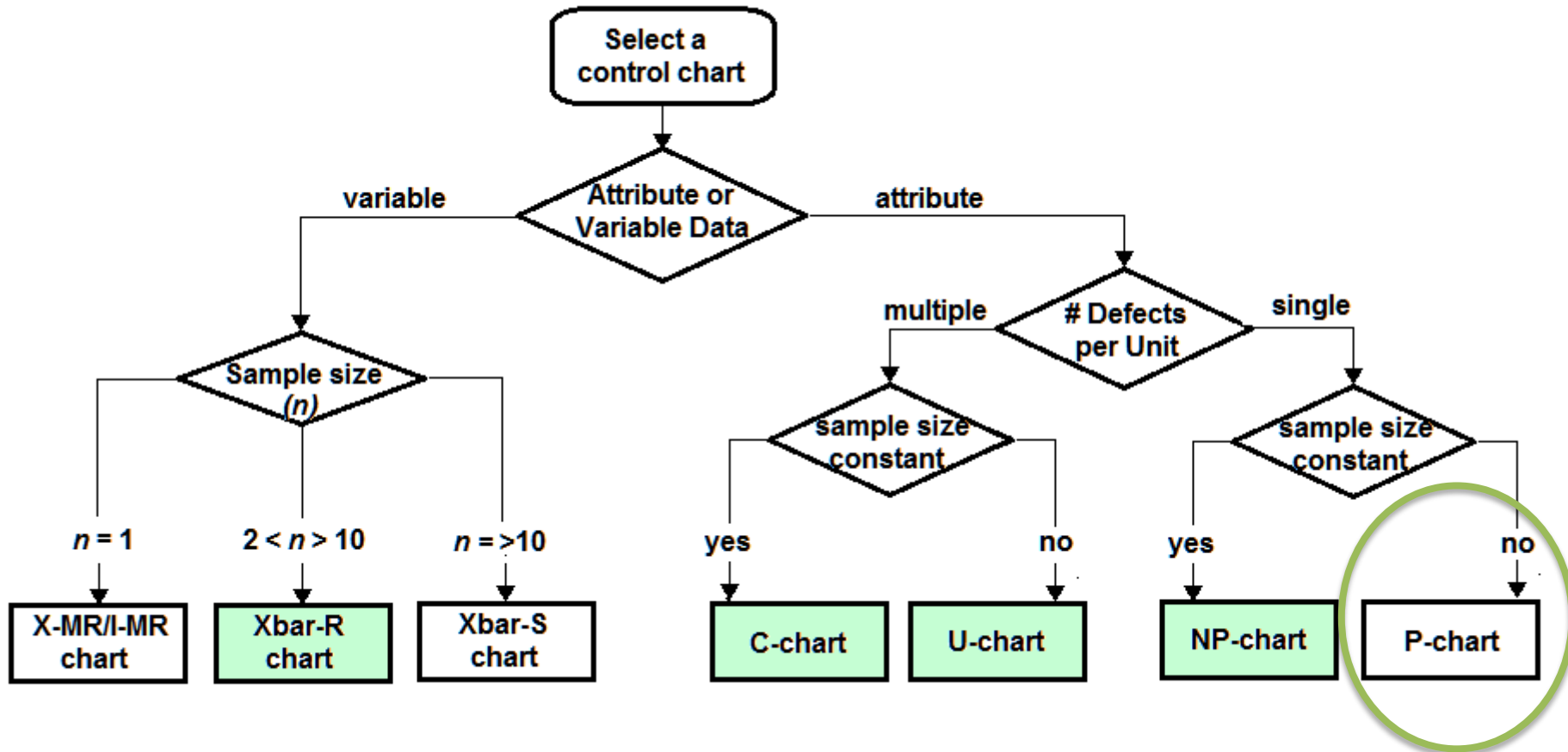
- ❑ -The Core is AVI/MVI program, with strategy for DML / standard work / certification / validation
- ❑ -The control strategy with ctrl chart and AQL guarantees that VI is kept under control
- ❑ -Continuous improvement is the goal of all VI activities with CAPA mngt. The Particle management is a key to success with particle control and associated WOW & education, product life cycle approach



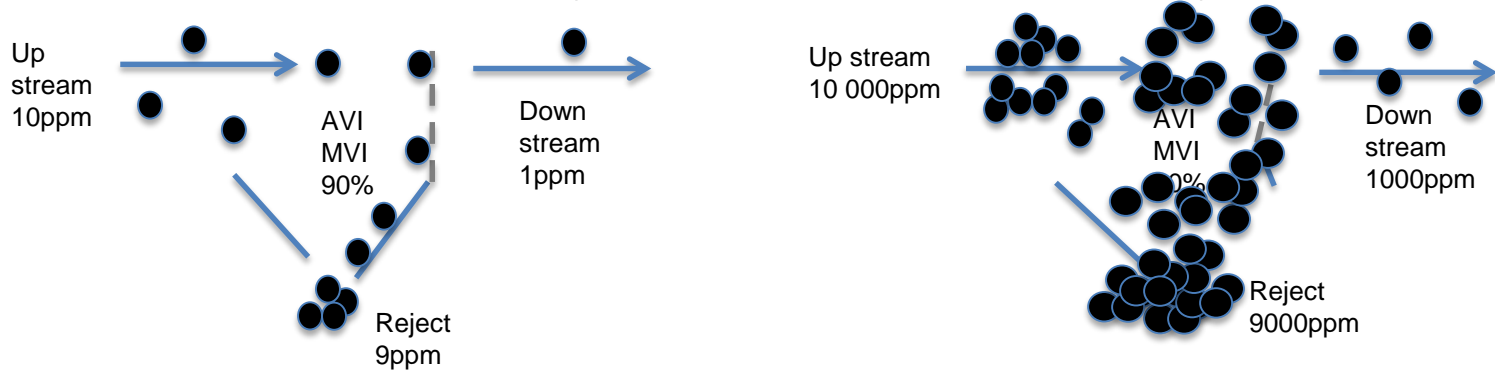
- Control Strategy



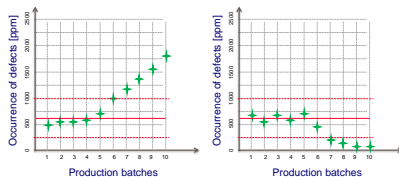




- Use of ctrl chart necessary because VI is a Markov like process



- Use of P' ctrl chart very powerful to track any drift or atypical lot



$$UCL = \bar{p} + 3 \sqrt{\frac{\bar{p}(1-\bar{p})}{n_i}}$$

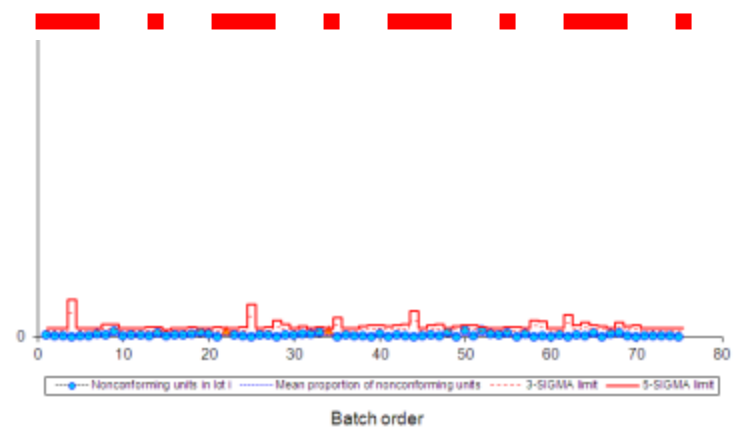
$$UCL = \bar{p} + 3 s_i s_z$$

- 3 sigma probability follow binomial law
with 99,7% proportion of defective units

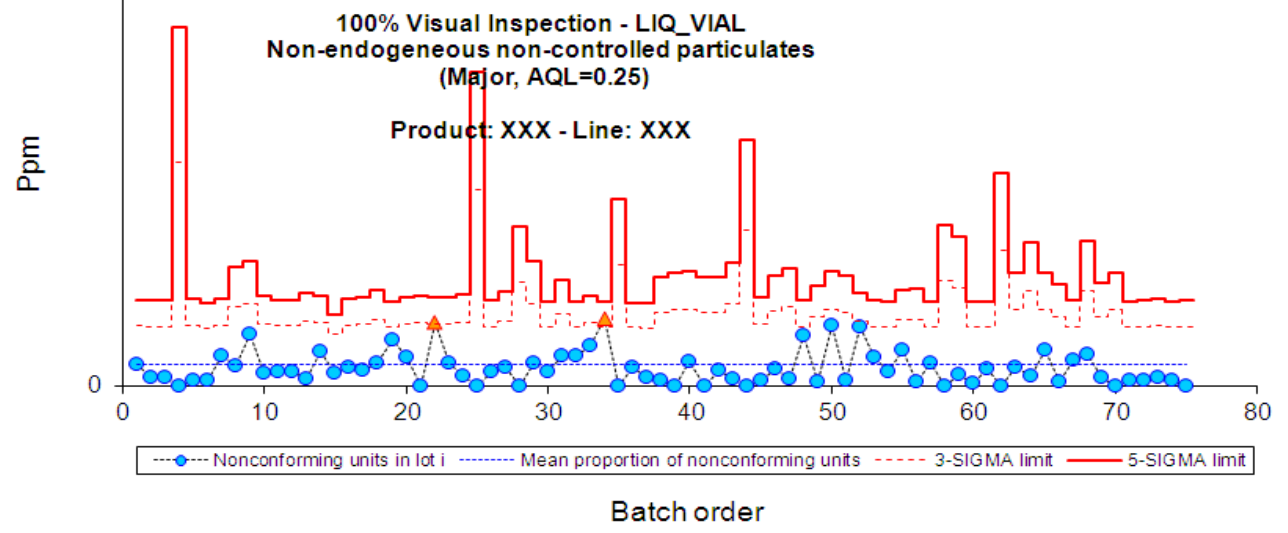
Control Strategy- Ctrl chart

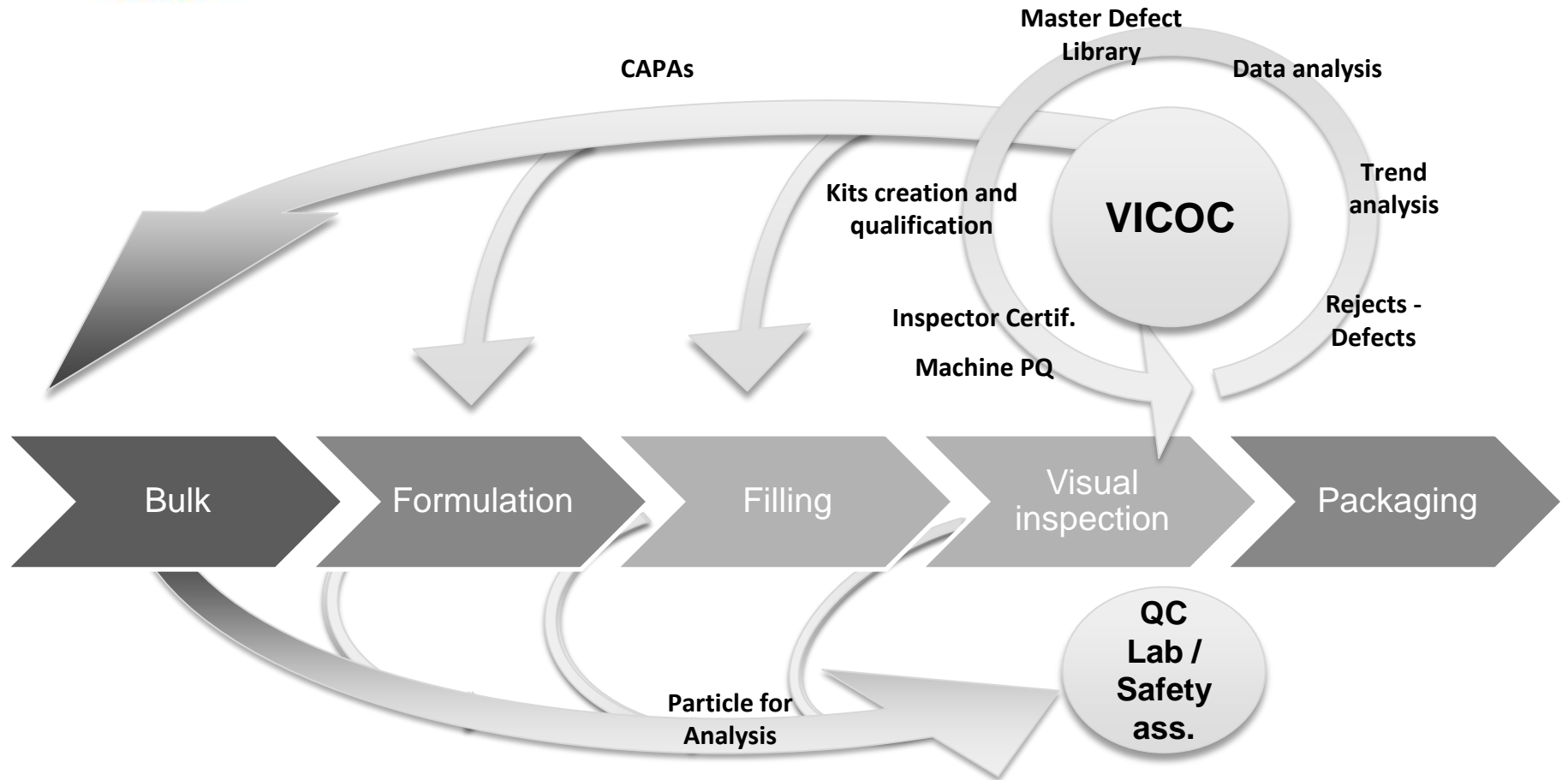
Take AWAY: Even with a low probability of detection (non NULL!!) the UCL limit is strenght of the control strategy has the ability to discard atypical lots in term of occurrences.

AQL Limit



- Reject rate below ULC
- ▲ Reject rate above UCL
- 3σ-UCL
- 5σ-UCL





- In this section you have learnt:

Ctrl strat.

Integration of visual inspection into overall manufacturing process

Elements of lifecycle

Particle identification/ characterization

Defect libraries as dynamic database

AQL and control charting
