pda.org/2018Taiwan

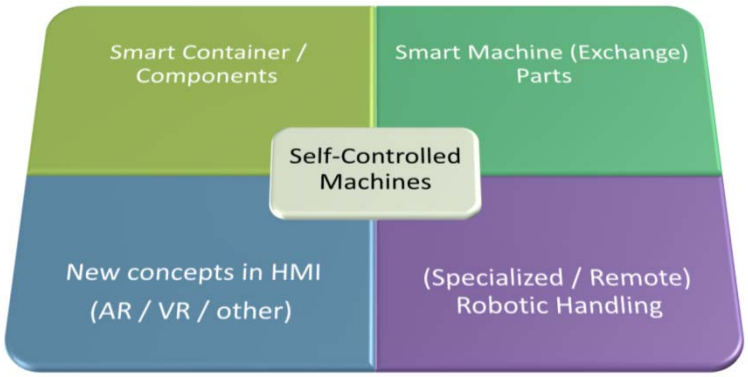
2018 PDA Connectivity Workshop: Digital and Pharma

The future of Interactive Machinery

November 8, 2018
Taipei, Taiwan

From Smart Packaging to Augmented Reality

Fully aware production equipment – Key elements

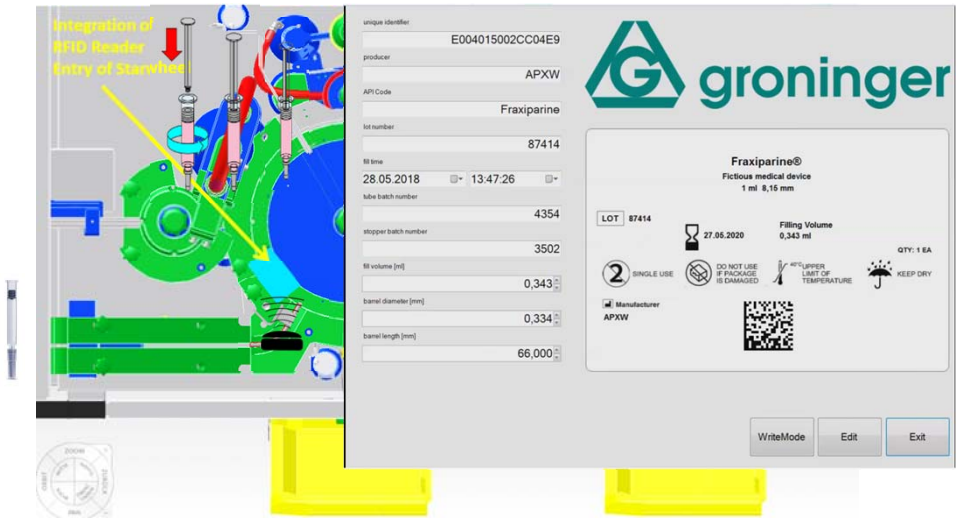


What else

- Trending → Preventive → Predictive → AI
- Self-fitting and Self-adjusting equipment

2

Integrating RFID capability – Process flow

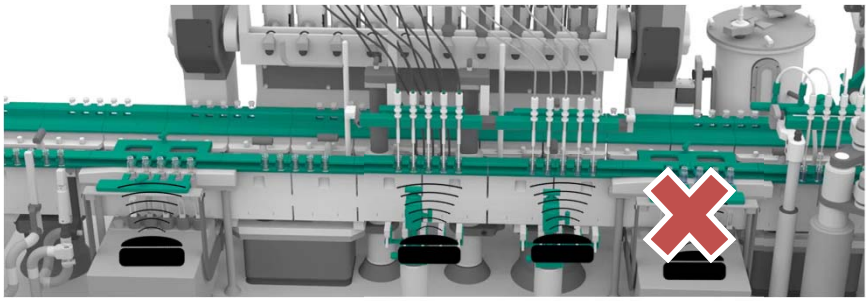


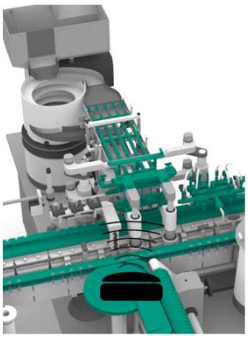
3

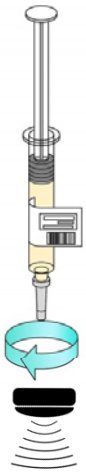
Live demo at ACHEMA 2018

4

Sample Processing Steps @ Fill & Finish







Tare Weight

Fill Infos e.g.
- API code
- Expiry
- Lot No.
- Manufacturer ID

Gross Weight
- Calculate & write net weight

Stopper Position

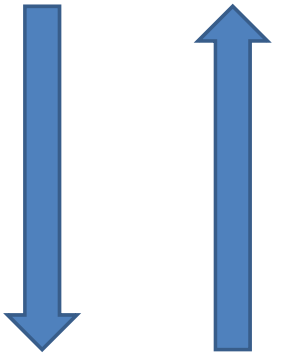
Gross Weight ≠ Target Weight
➔ Not OK Flag ➔ Discard Syringe

Labelling

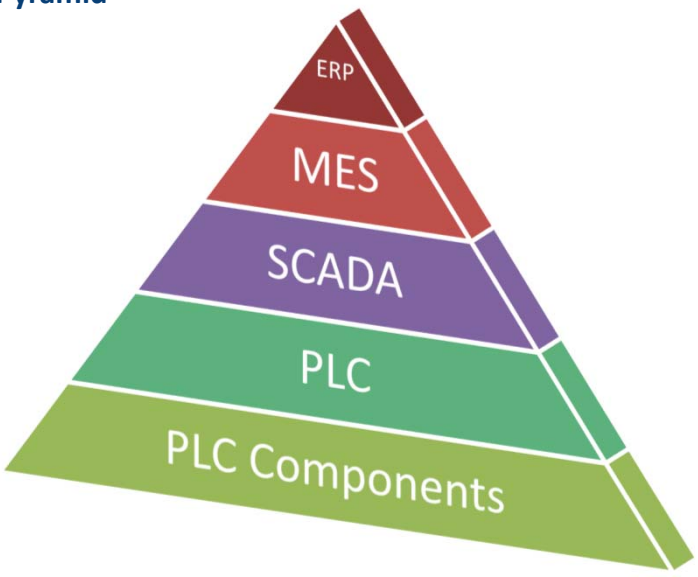
Object Awareness strongly reduces PLC programming and opens new flexibility in production equipment

Digitalization – Automation Pyramid

Planning preferences



Dataflow



6

Plug and Produce: A joint ISPE effort

Install a new machine like USB device on PC and qualify with (nearly) no effort

7

Smart Machine Components

Tagged format parts

- With RFID or QR code
- Benefits
  - Format size parts are allocated to the product recipe
  - Control function whether all format size parts are in place
  - Supporting operators when format size parts need to be changed
  - Determined order/sequence of installing the format size parts
  - Overview of all parts at the HMI showing exact position, with ID numbers for ordering new parts

8

Augmented Reality?

„Pokemon Go“ and respective logogs are trademarks of Niantic.

9

Augmented Reality – First steps to reality

Step-by-step instructional /
Guidance to manual interventions

Insert process relevant information with respect
to observed station / process

10

Online Smart Service Technician / Smart Operator

Enable local staff to identify and solve the problem

11

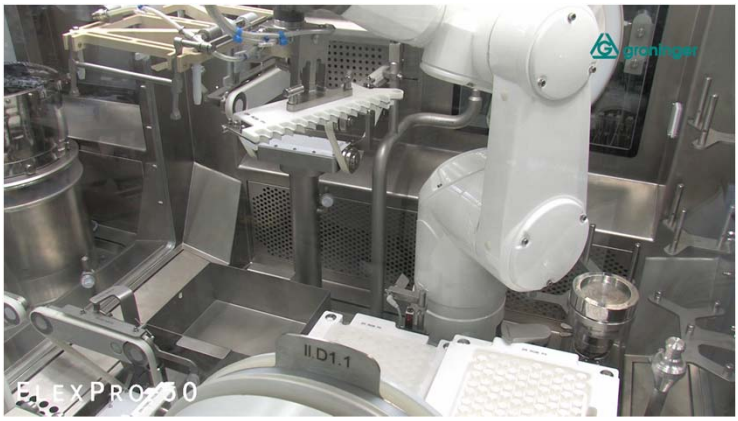
Smart Service Technician / Smart Operator

Applications

- Chat with integrated translation program
- Direct communication via HMT-1 with the helpdesk
- Screen sharing with marking option
- Snapshots
- Video documentation of the session
- Spare part identification with data matrix code
- Online (Re-)Training capabilities

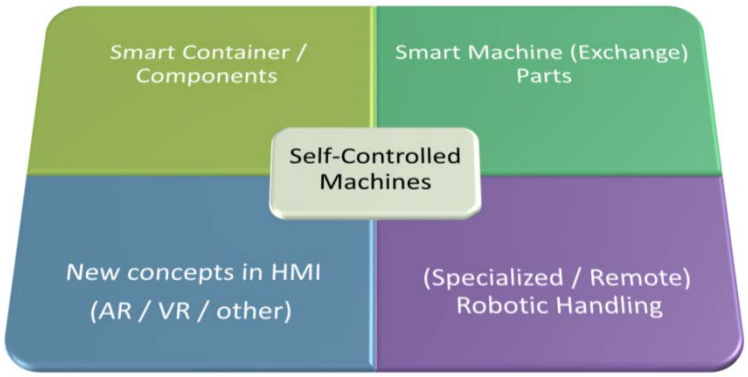
12

Flexible Robotic Handling



13

Fully aware production equipment – Key elements



What else

- Trending → Preventive → Predictive → AI
- Self-fitting and Self-adjusting equipment

14

From Smart Packaging to Augmented Reality

Food for thoughts

- Smart packaging is a key element for intelligent machinery and flexible automation
- Smart Packaging may also be the starting for trending and predictive interventions → Route to AI?
- Tagged machine parts are second key instrument
  - Including filling equipment (header bag, manifold etc.)
- Platform developments in Automation could unify and produce real “Plug & Play”
- Augmented reality highly assists operators and service staff to understand and tune existing equipment

15

Thank you!

Q&A

groninger

Egmont Semmler, PhD
Director R&D Pharmaceutical Processes
Email: e.semmler@groninger.de

16

2018 PDA Connectivity Workshop: Digital and Pharma | November 8, 2018 | Taipei, Taiwan | @PDAOnline | #PDATAIWAN