



Implementing DCCs in Industry

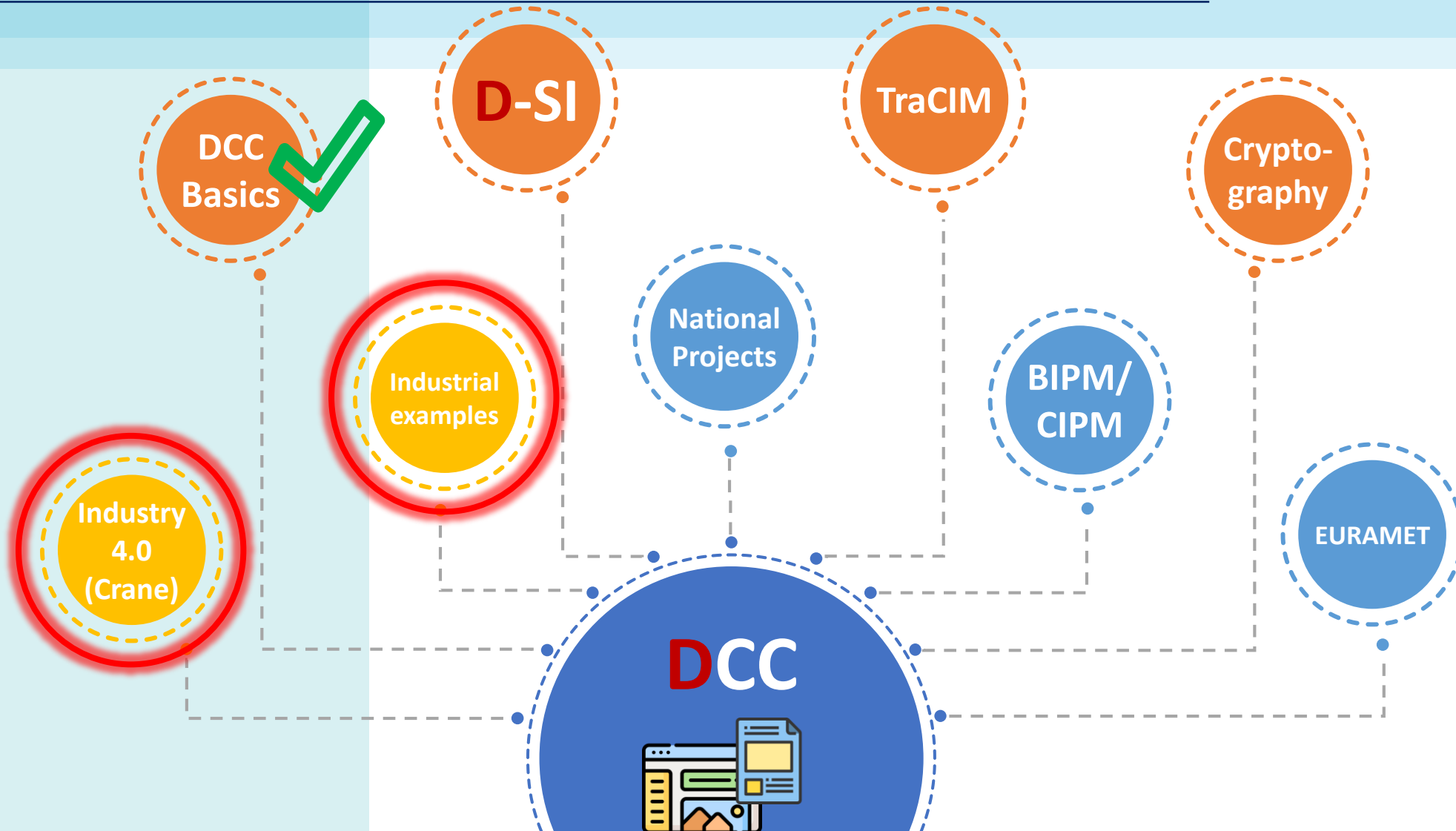
SmartCom Showcase Part I



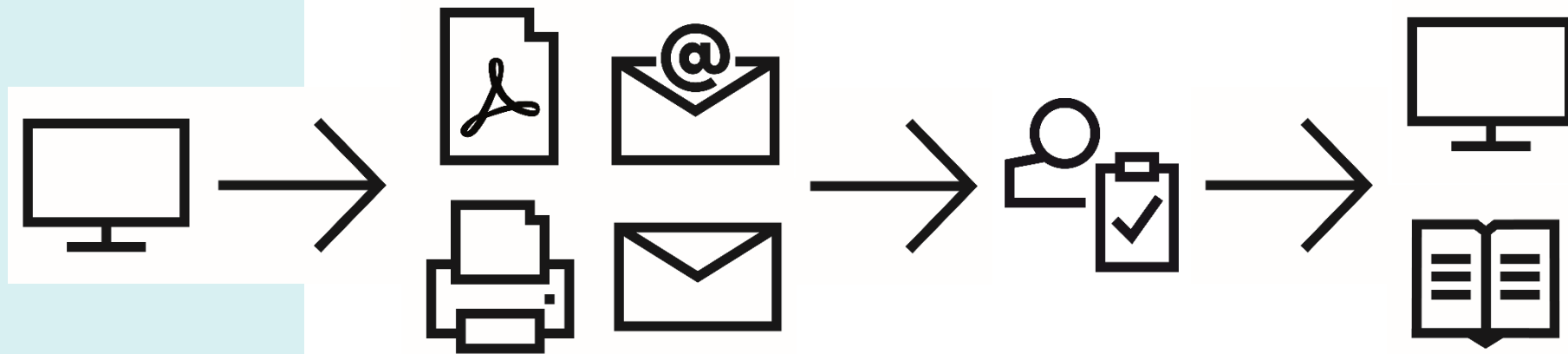
DCC – Showcases

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Current handling of Calibration Certificates



Calibration Certificates are created by Software, then transferred to the customer as PDF file or hardcopy. At the customer, Certificates are manually checked and manually transferred to TEMS or stored.



error-prone



time-consuming

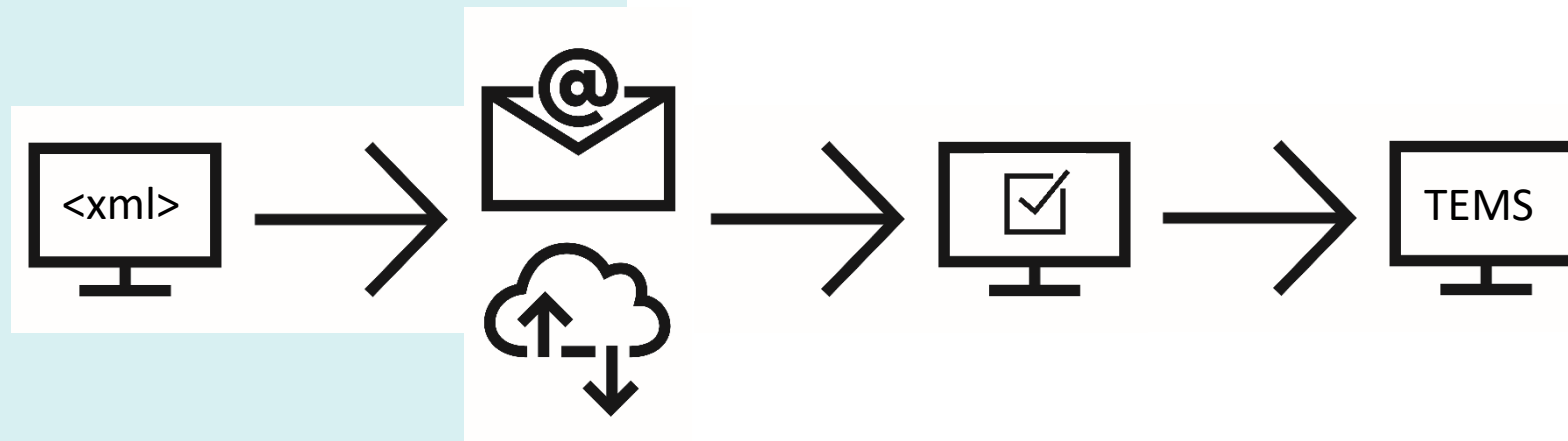


hindering further functionalities

Use Cases for Weights, Balances and Pipettes

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Test Equipment Management System

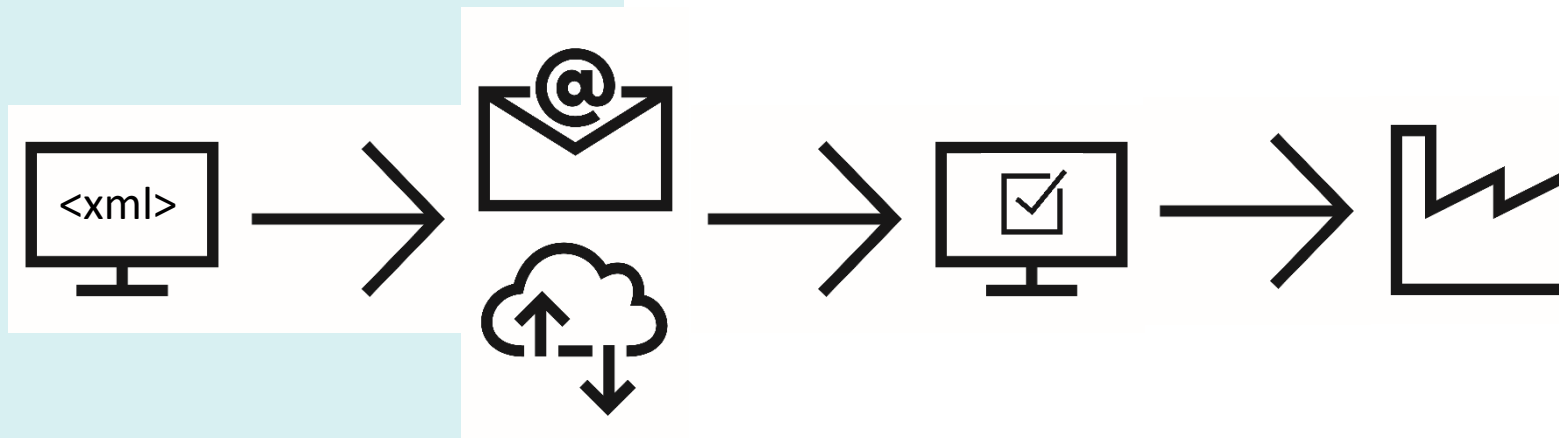
- Calibration history

A scatter plot showing data points over time (t). The points show a slight upward trend, indicating a drift in the measurement over time.
- Calibration interval determination

A scatter plot showing data points over time (t). A horizontal double-headed arrow indicates a time interval, and a vertical double-headed arrow indicates a range of values, illustrating how these factors are used to determine the next calibration interval.
- Optimized use

A scatter plot with 'Error' on the y-axis and 'Measured value' on the x-axis. Red dashed lines define an acceptable error range. Data points are clustered within this range, with a green bar at the bottom indicating the measured values that fall within the optimized use range.
- ...

Use Cases for Industrial Processes



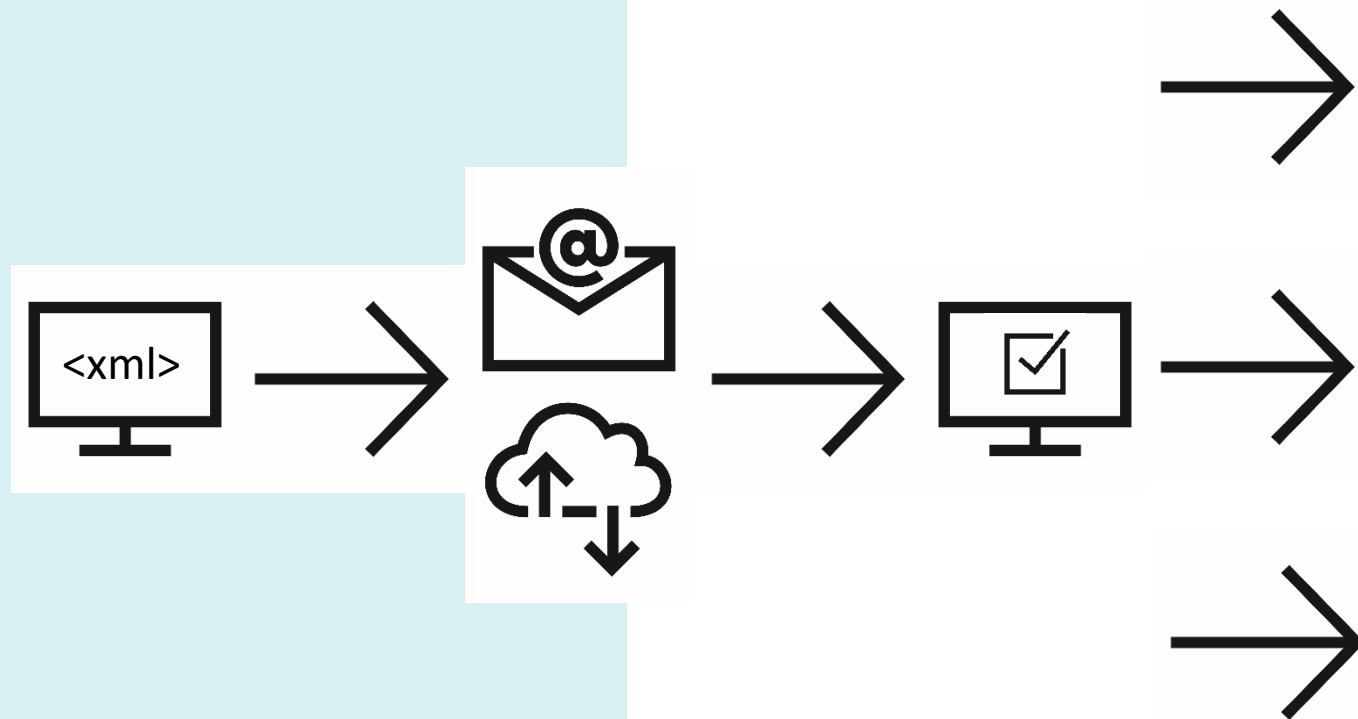
SPS / SCADA / MES / LIMS

- Use of corrected “true” values for steering/controlling of processes
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Use Cases for Weights, Balances and Pipettes

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- Use calibrated weight values in Weight Management in Balance software



- Weight import into calibration software for balances



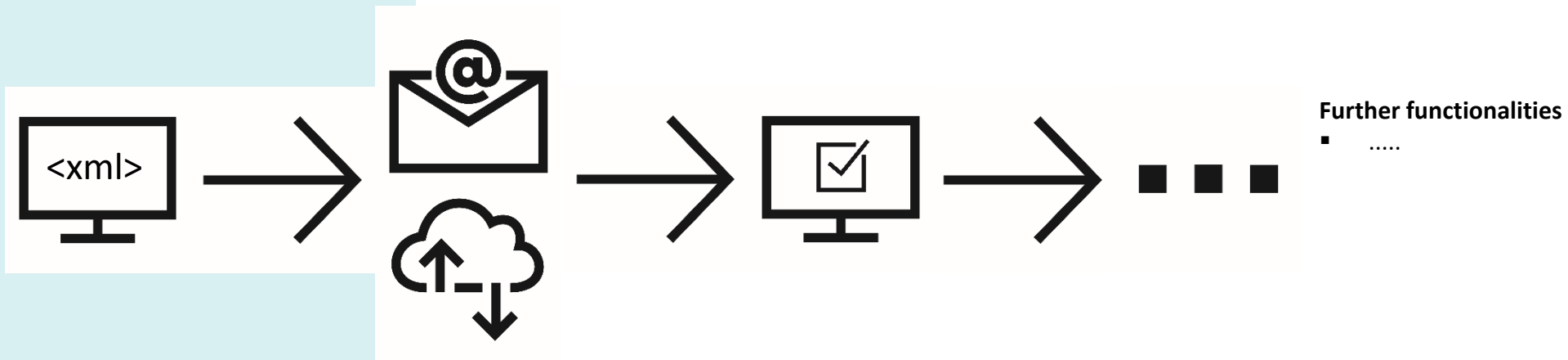
- Balance calibration results/status into calibration SW for pipettes



Use Cases for Weights, Balances and Pipettes

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Conclusions

- DCCs will improve process safety, data integrity, efficiency and ease of use of calibration data
- Current DCC schema is flexible enough to allow digital representation of all current calibration scenarios

Open points

- Harmonisation worldwide needed to ensure laboratory-independent data usage
- Global coordination of definitions, schemata and usage urgently needed
 - E.g. like with the BIPM for the metre convention / SI units
 - E.g. like with OPC-UA for definition of companion specifications for different branches

Acknowledgements

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