

Dissemination and valorisation of RFCS-results in the field of “Advanced Automation and Control Solutions in Downstream Steel Processes” and development of a strategic vision for future research

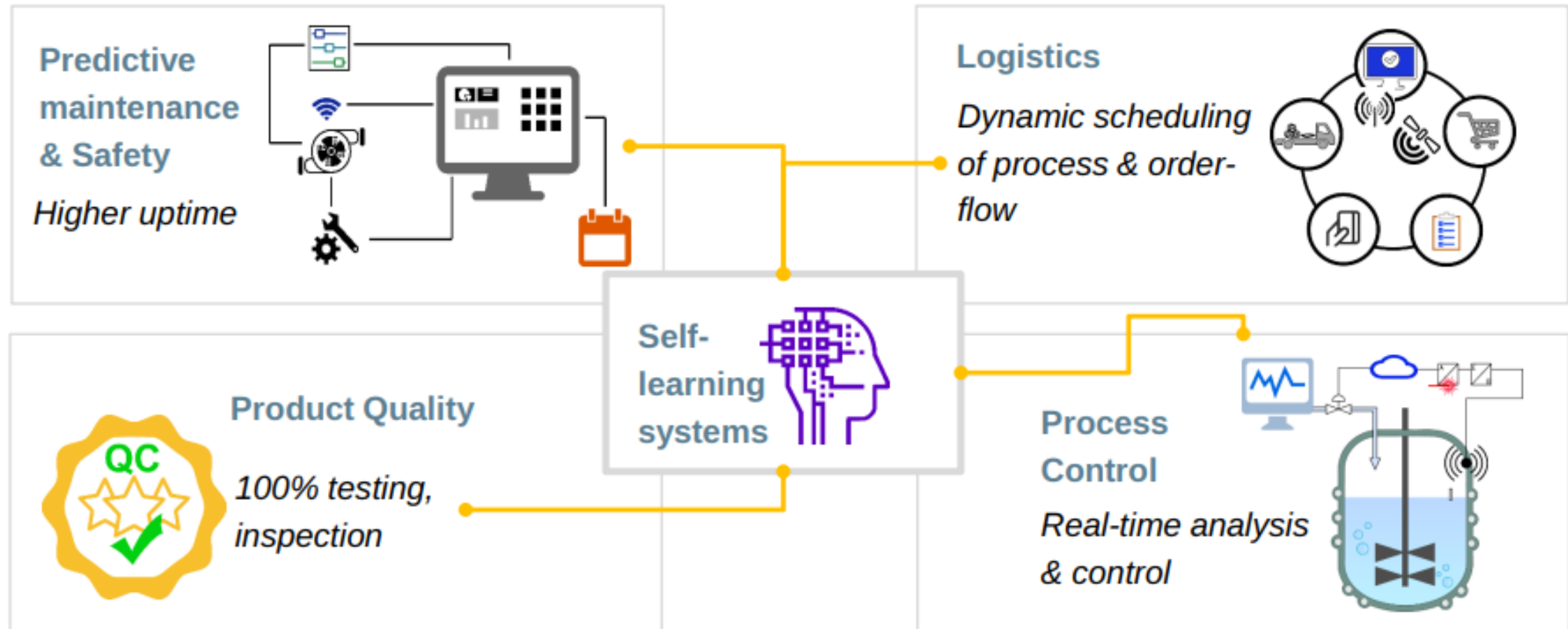
CONTROL^{IN}STEEL



International Seminar: Digitalization as Key Driver in the Steel Industry: Cases from some RFCS funded projects.

Next steps after digitalization 4.0 in the Steel Industry

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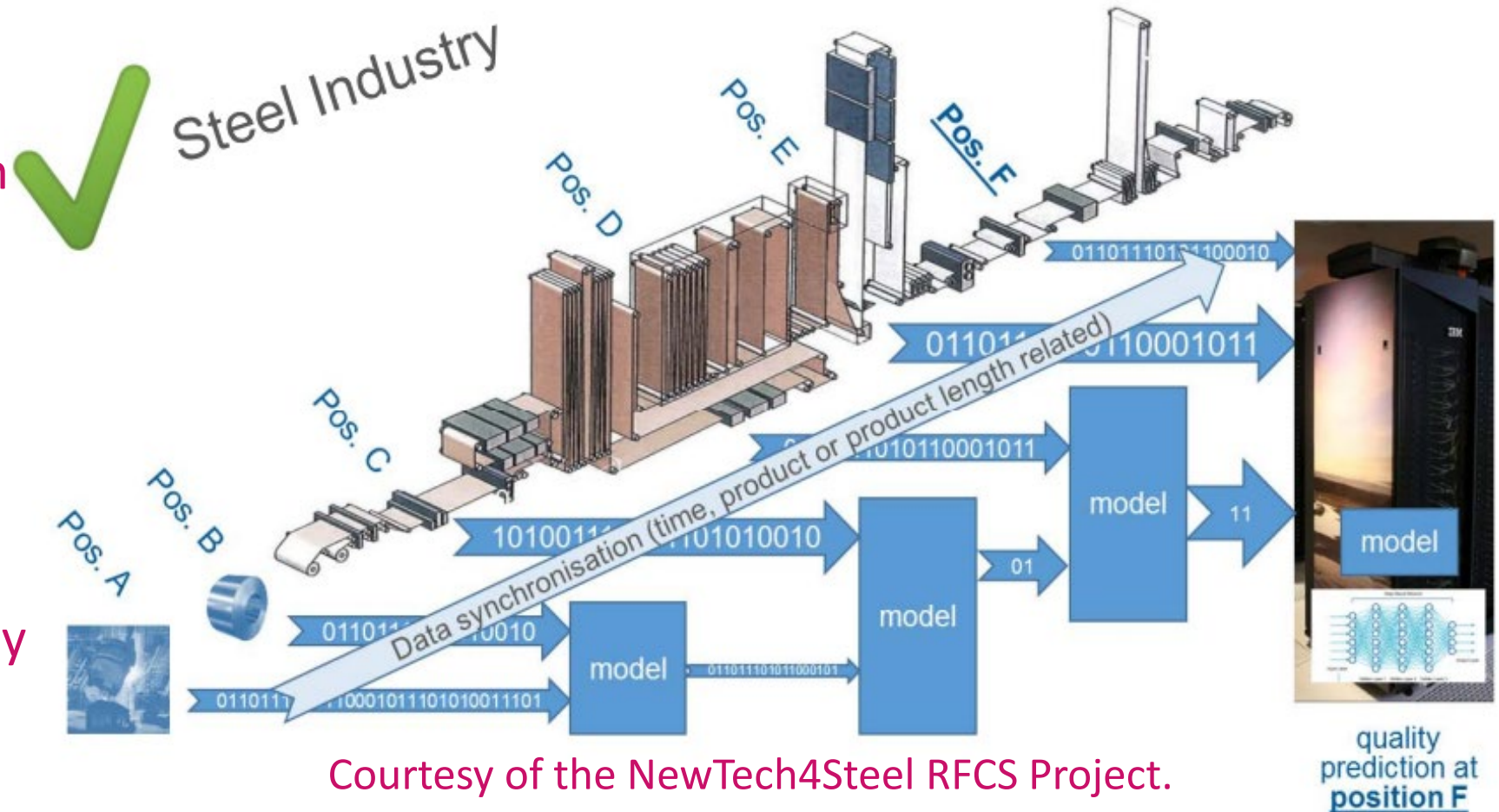


Project No.: 899208

Next steps after digitalization 4.0 in the Steel Industry

Digitalization as key driver for different use cases: Product Quality Prediction

- AI based solutions
- Prescriptive diagnosis
- Enabler for servitization
- Blockchain 4.0 (DLT) as key for sharing information among different stakeholders
- Additional assessment criteria (Green Steel)
- Increase of transparency along the value chain



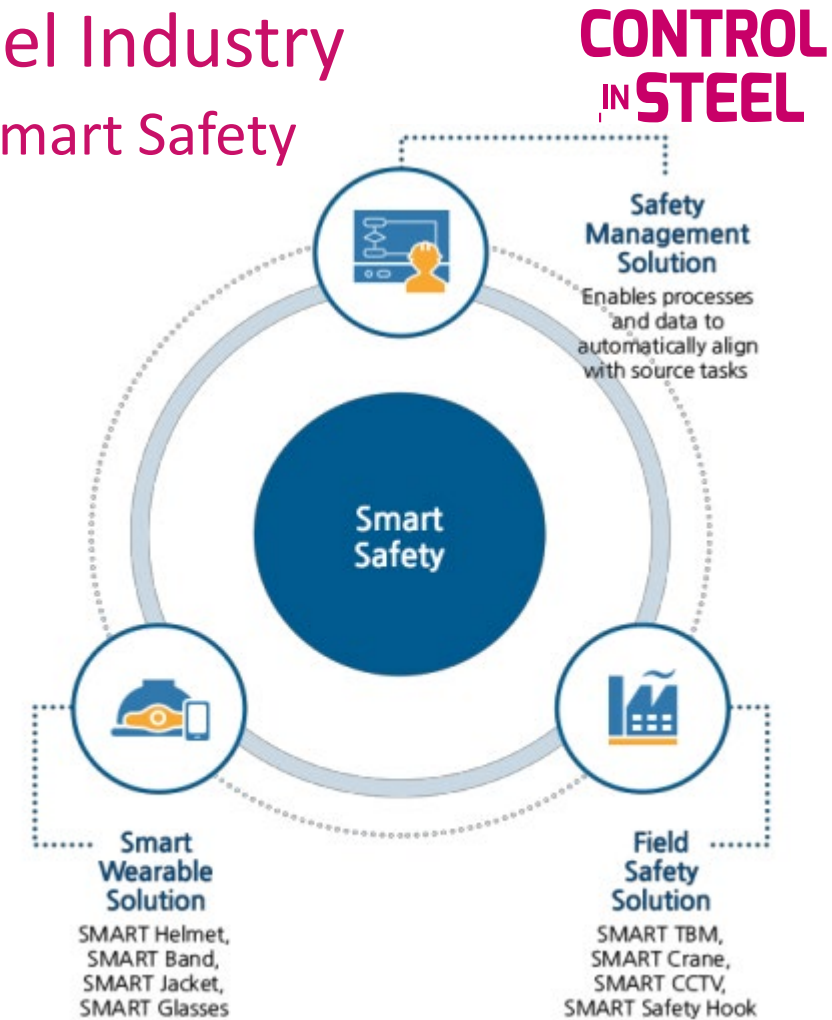
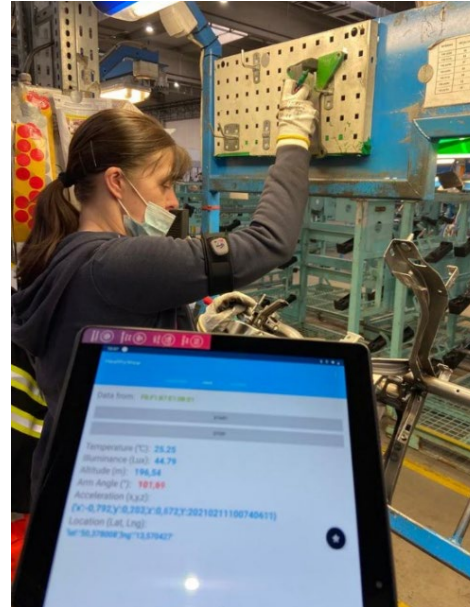
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Digitalization as key driver for different use cases: Smart Safety

- AI based solutions for prediction
- Blockchain 4.0 (DLT) as key for sharing information among different stakeholders
- Key for increase the empowerment of workers.
- Better integration between processes and operators => I5.0
- Increase of transparency => increase awareness of managers
- Easyng the imputation



Courtesy of the WISEST RFCS Project.

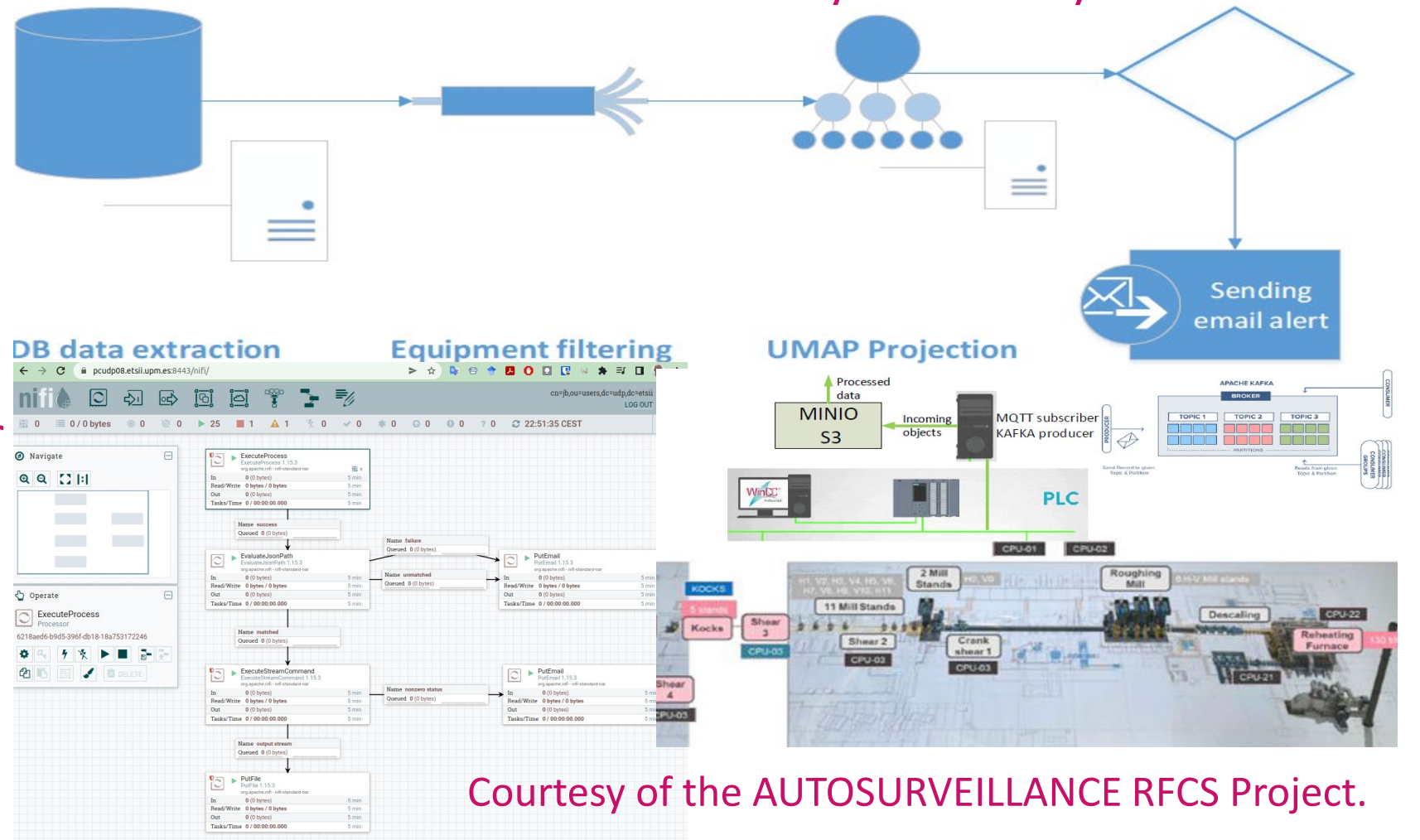
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Digitalization as key driver for different use cases: OT based Cybersecurity

- Easing transition toward combination with cloud architectures
- Highly scalable workflow solutions able to work in near real time
- Similarity supports regular operation
- High dimensional variable spaces can be quickly reduced
- Integration of advising system



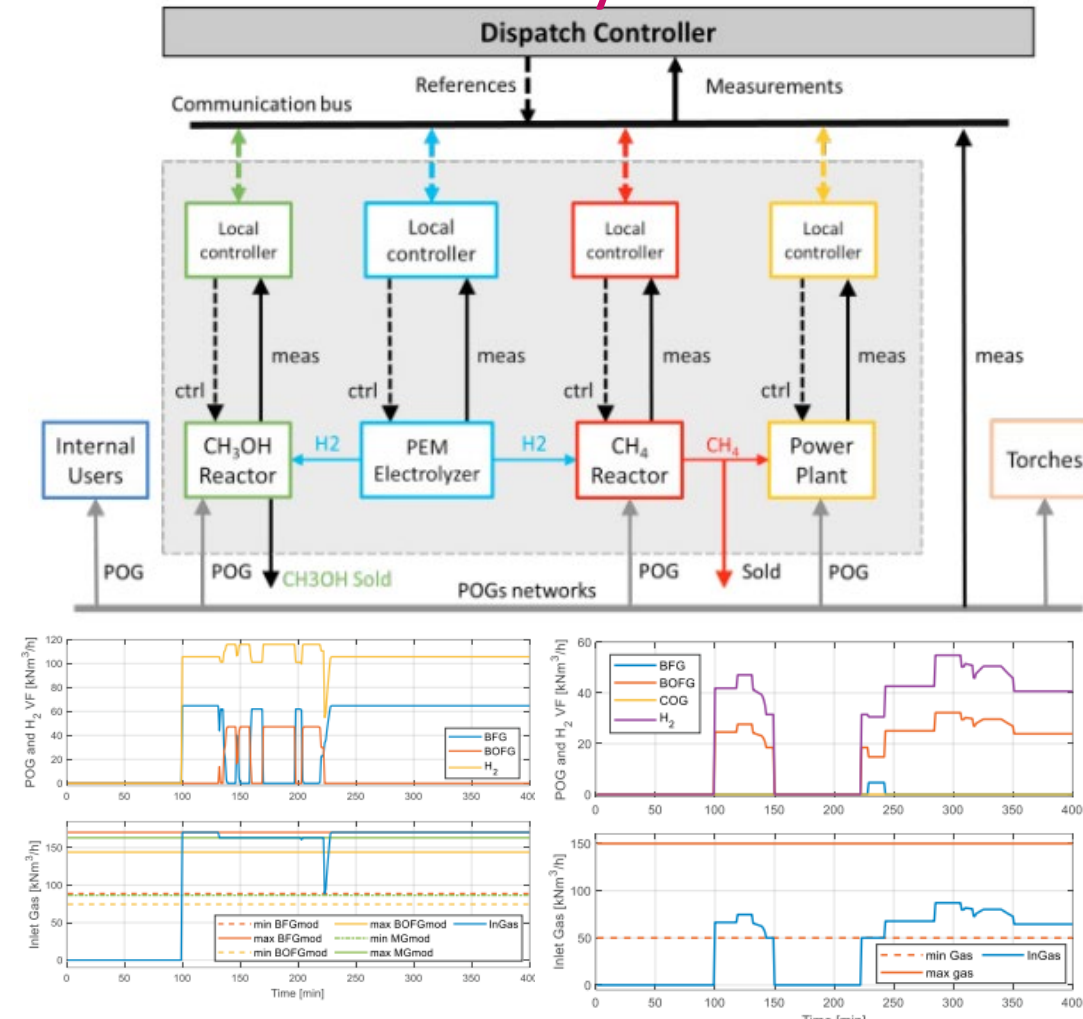
Courtesy of the AUTOSURVEILLANCE RFCS Project.

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ENERGY MANAGEMENT

- Digitalization as operating tool to optimize energy source management
- Enable energy imputation at product level => product labeling
- Easy extension to consider transport impacts
- It will be a key element for cooperation between stakeholders and servitization



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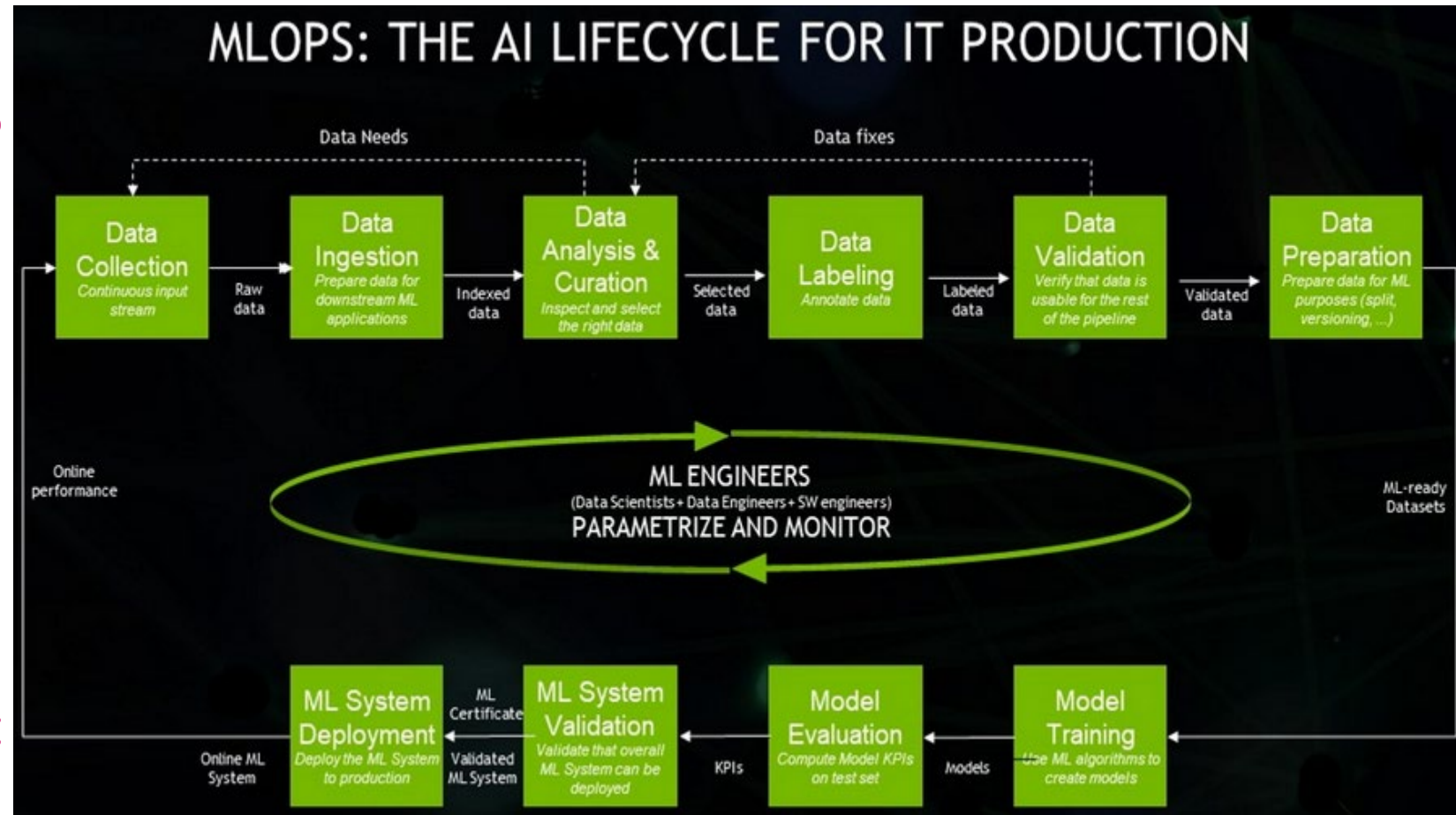
Courtesy of the I3UPGRADE RFCS Project.

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MLOPS 4ALL

- According to predictions this market will growth 20% rate until 2025 (12x since 2019) [Deloitte & Gartner].
- Contribute to the high quality alloy steel grades.
- Contribute to better segment the scrap looking toward high quality clean steel.
- Accountability of impacts at product level through the value chain.



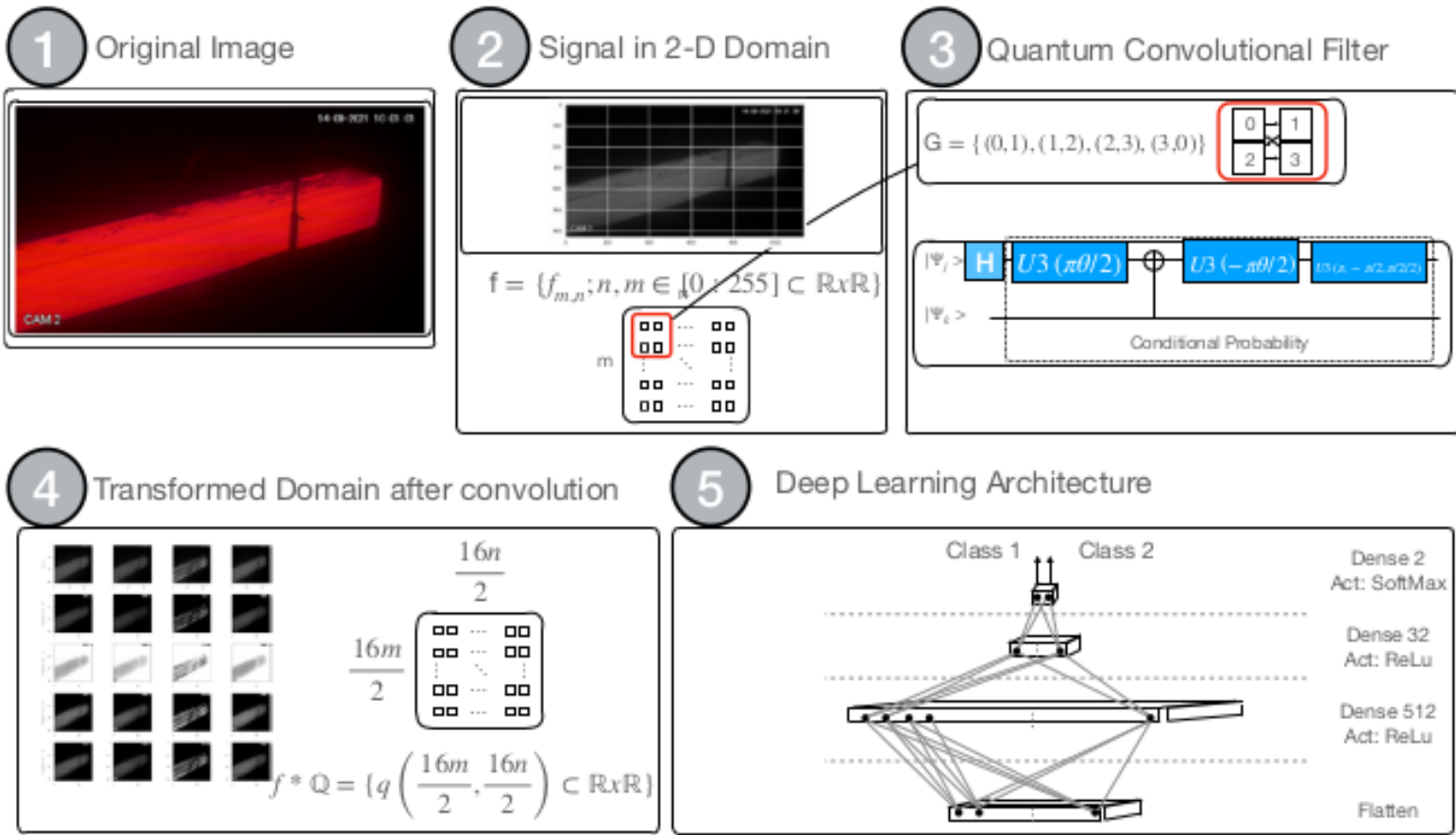
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QUANTUM DISRUPTION

- Offering new algorithms to deal with intractable Hard NP complete problems
- New era for CNN DL models towards QDL
- Quantum Edge solutions supporting IoT functions
- Integration between Qedge with Fog computing to enable powerful and extensive applications



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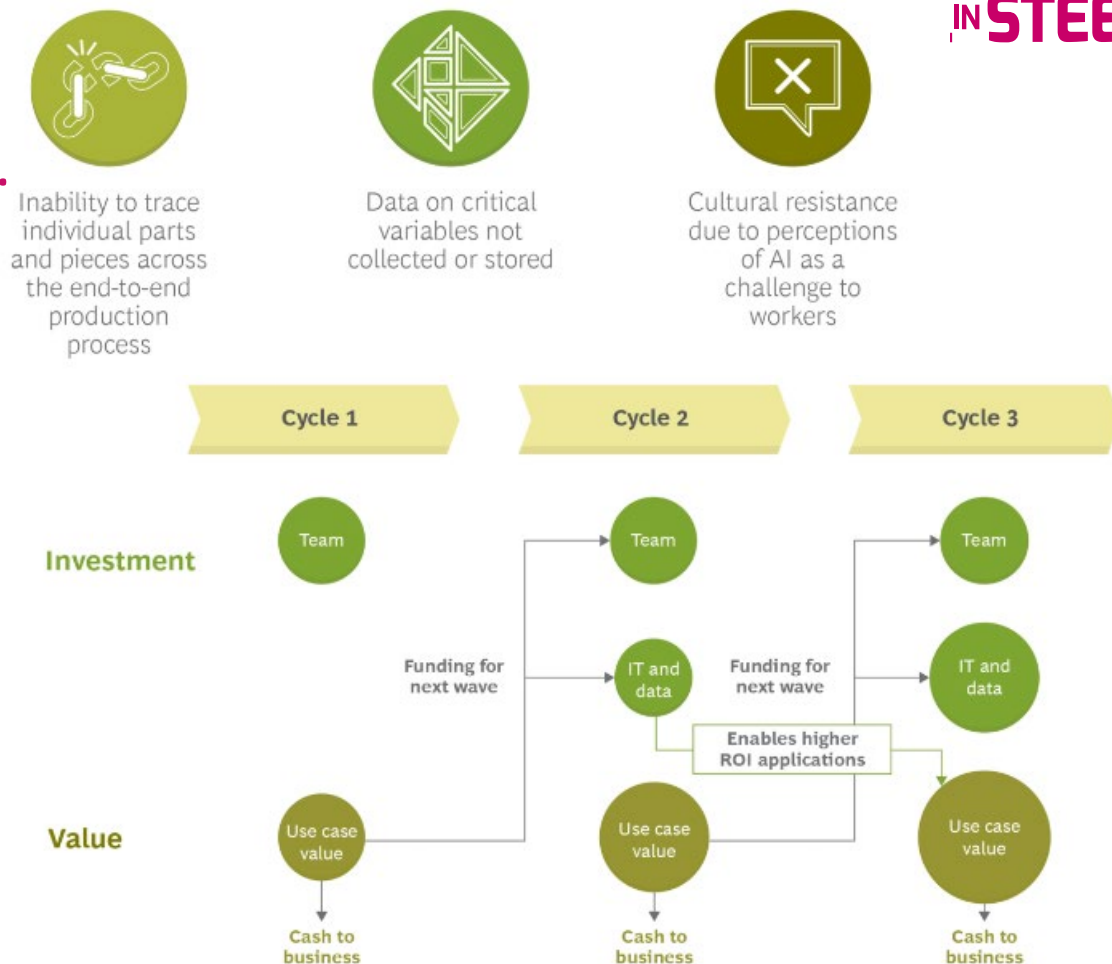
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AI and VALUE CREATION

- Step0: Conduct initial pilots with supervised AI.
- Step1: Create the “Snowball Effect” increasing value generation.
- Step2: Embed fully integrated AI to support autonomous decision making.
- All steps: Do not forget workers embedding.

AI is advancing rapidly, but most steel manufacturers have yet to take advantage of it.

Implementing AI requires overcoming some clear challenges in terms of data and organizational culture.



Source: BCG analysis.

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Conclusions

- Enormous opportunities for the industry & society. *People must be at the heart of the change.*
- Change towards complex jobs requires multi-disciplinary skills
- Technological advances largely predictable. *Social welfare systems will need review to tackle inequality.*
- Ignoring the change or wanting to be a follower may not allow your business to be maintained. *Join in and participate or you may never catch up.*

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Thank you for attending this presentation

Merci d'avoir participé à cette présentation

Vielen Dank für Ihre Teilnahme an dieser Präsentation

Gracias por asistir a esta presentación

Grazie per aver partecipato a questa presentazione

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