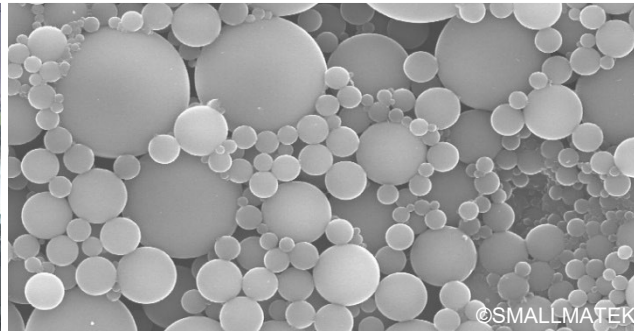


MODELLING SUPPORTED DESIGN OF SUSTAINABLE PROTECTIVE COATINGS

VIPCOAT open innovation approach: Quadruple Helix Model



Natalia Konchakova (Helmholtz-Zentrum Hereon)



VIPCOAT project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 952903

VIPCOAT

Main project features



Virtual Open Innovation Platform for Active Protective Coatings Guided by Modelling and Optimization

- EU Programme: H2020-NMBP-TO-IND-2018-2020
- Topic: DT-NMBP-11-2020 **Open Innovation Platform for Materials Modelling**
- Research & Innovation Action
- Grant Agreement **952903**

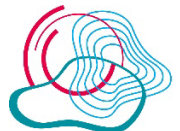
Coordinator:

Helmholtz-Zentrum Hereon

Dr. Natalia Konchakova

Contact: natalia.konchakova@hereon.de

- Start: **May 2021**
- End: April 2025
- Overall budget € **5 519 625**



Helmholtz-Zentrum
hereon

VIPCOAT

Aims and Objectives



VIPCOAT video: <https://ms.hereon.de/vipcoat/>

INDUSTRIAL CASE

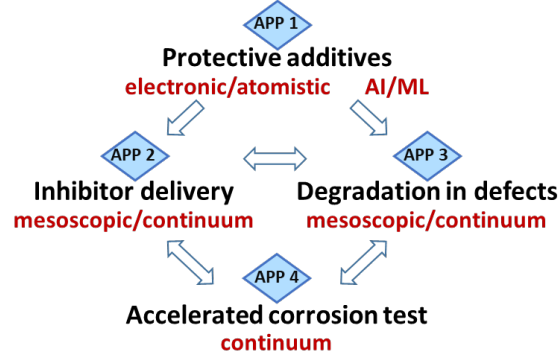
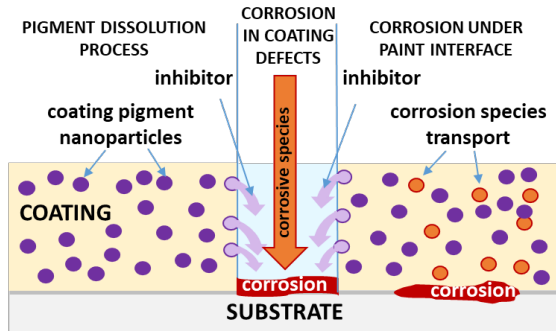
Active Protective Coating: some KPIs



- Cr(VI)-free primer and compliance to customer specifications (technical, industrial, commercial)
- To ensure customers productivity through constant supply, quality, application support and new innovations
- Compatibility to all qualified products in the market
- Follow REACH specifications /requirements

SCIENTIFIC CHALLENGES

Active protective coating



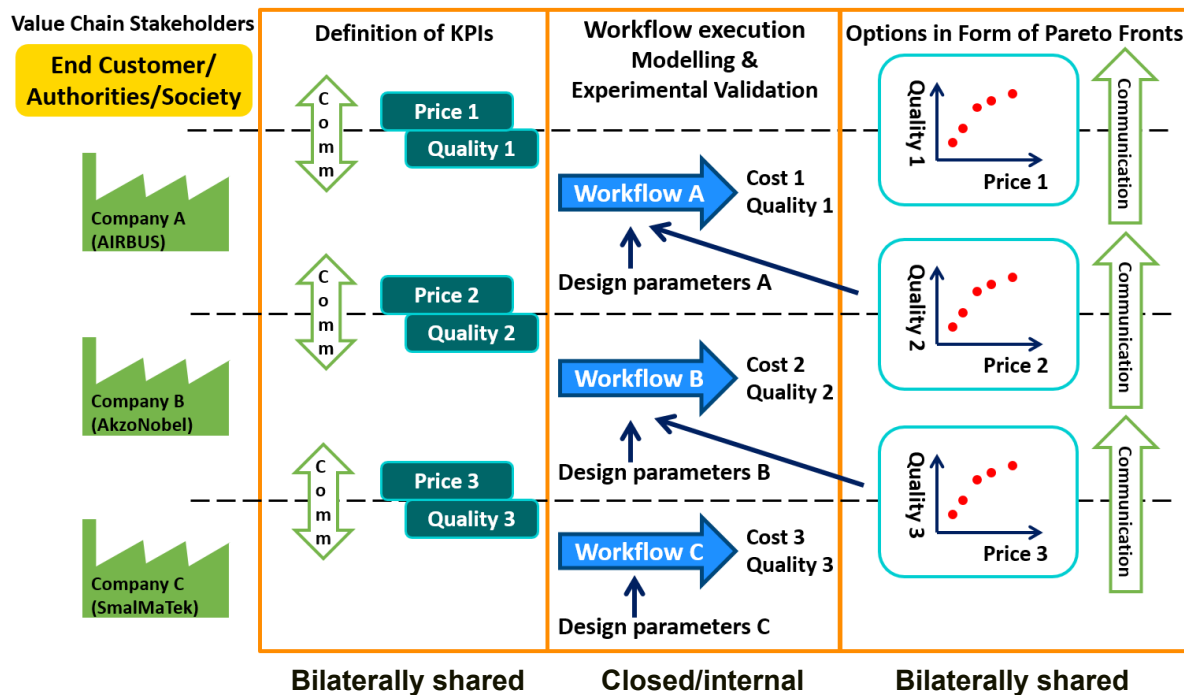
- Effective and efficient corrosion inhibitors
- Optimal coatings microstructure and inhibitors leaching
- Materials behaviour in static and dynamic conditions (wet and dry)
- Accelerated cyclic corrosion test

BUSINESS LAYER

B2B2B Environment



Collaborative industrial innovation along production chain



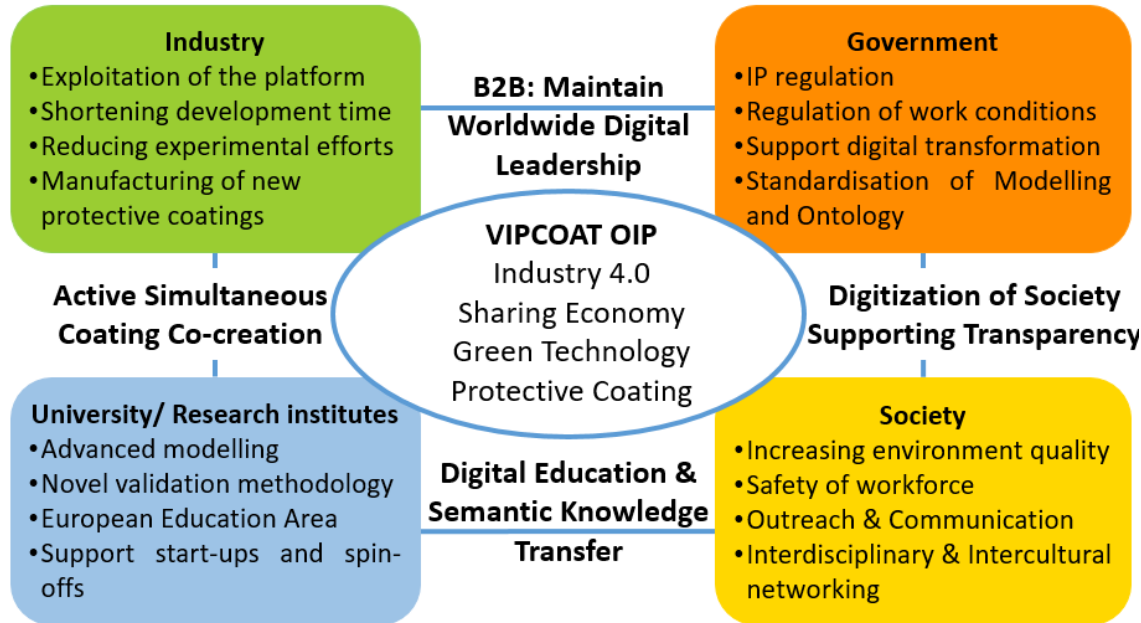
Specifications/requirements

- downstream: technological as quality KPIs
- upstream: technological design options and business KPIs (pricing)

MCO (Multi-Criteria-Optimization)
Provide the Pareto front of supplier variants (**B2B**) for downstream usage in an MCO design space (**B2B**)

OPEN INNOVATION PLATFORM

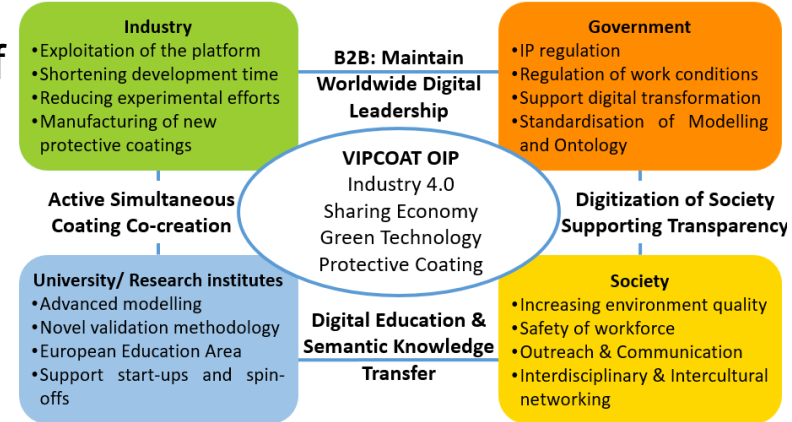
Quadruple Helix Innovation Model on top of B2B2B



Open Innovation 2.0 OI2: EC-Policy, central OI2 idea(*):

“OI2 is a new paradigm based on a Quadruple Helix Model where government, industry, academia and civil participants work together to co-create the future”

- Traceable generation of innovation projects
- Involve in „Idea generation“ all stakeholders of **Quadruple Helix Innovation Model (Industry, RTO, Administration, Society)**
- Use (adapted) Shapley idea to co-share value(s) generated.



- Idea: Learn from COVID-19 vaccine development
- Expected outcome: white paper paving the way to

Open Innovation Frameworks in Europe

Thank you.



FOR PEOPLE AND THEIR
FUTURE ENVIRONMENT



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