

Machine Learning Ledger

Orchestration for Drug Discovery

MELLODDY

powered by 



PHARMA PARTNERS



PUBLIC PARTNERS



Kubermatic



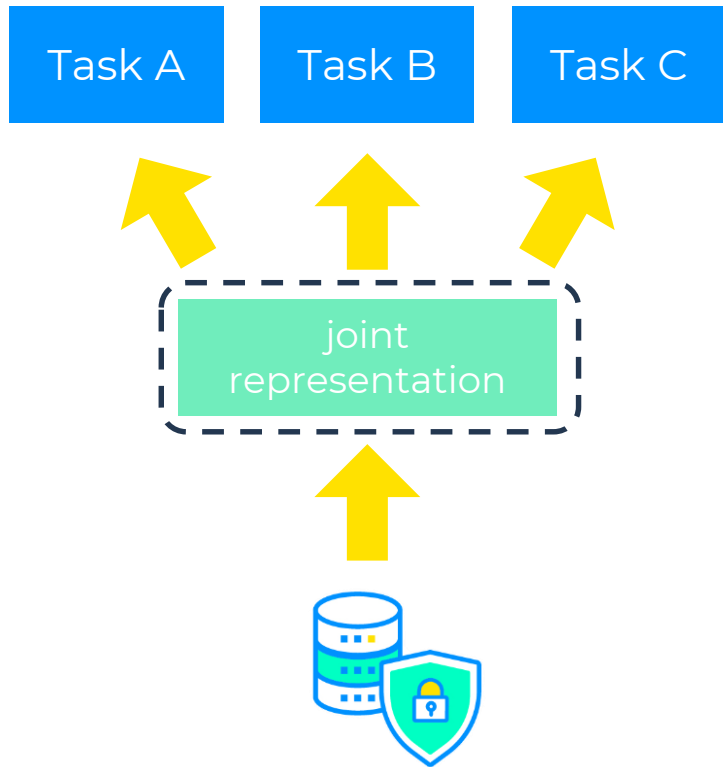
This project has received funding from the Innovative Medicines Initiative 2 Joint Undertaking under grant agreement N° 831472. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme and EFPIA



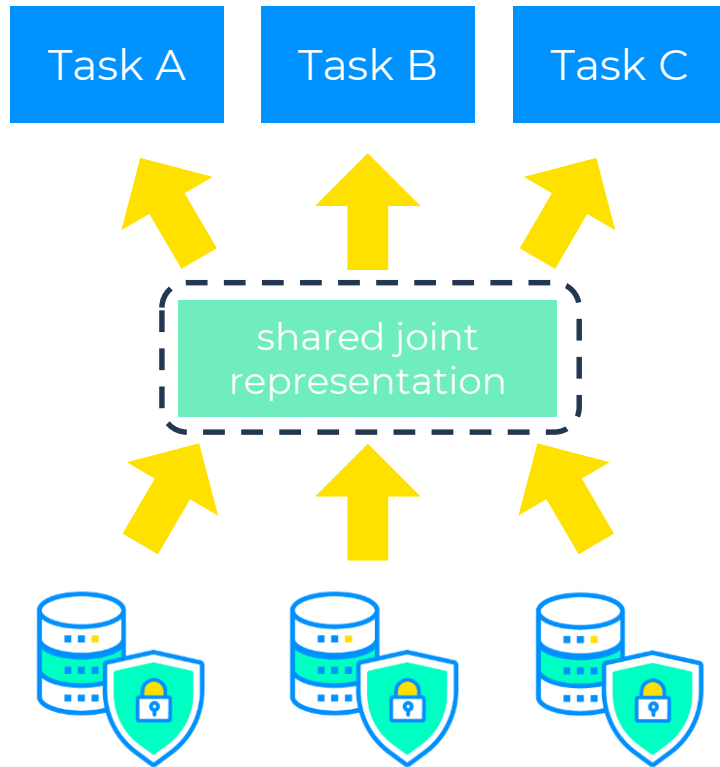
Multi-task learning

vs multi-task learning across parties

MULTI-TASK LEARNING

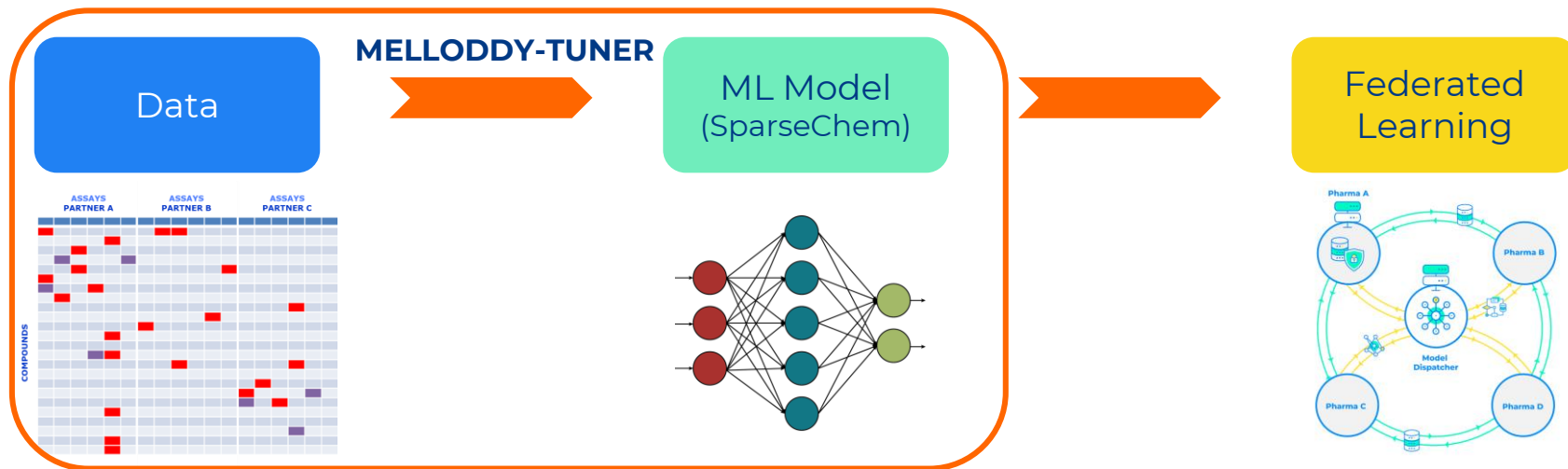


MULTI-TASK LEARNING CROSS PARTIES



MELLODDY-Tuner

Data standardization for federated learning



- Standardize data locally at multiple partners

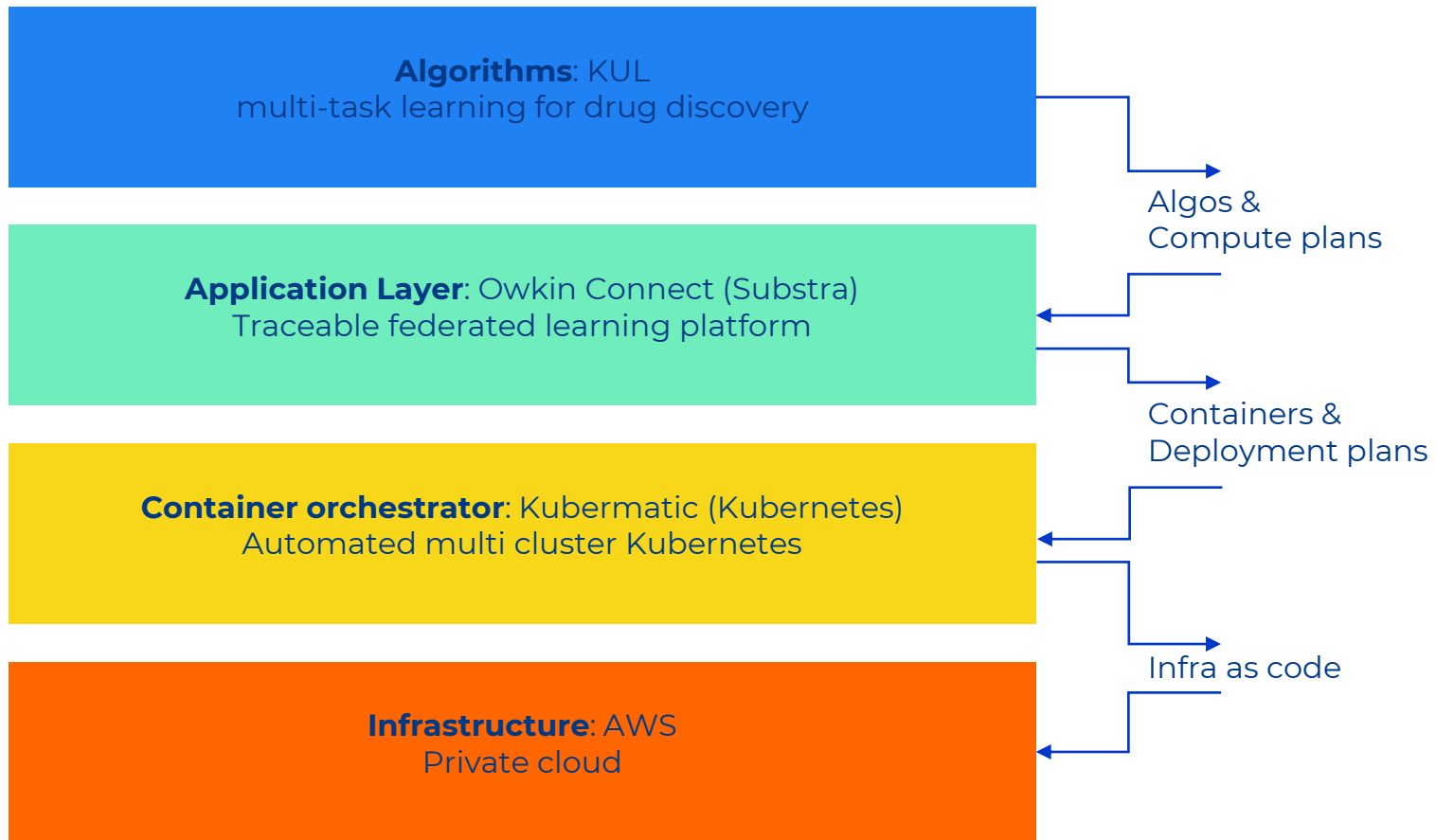


- Provide suitable input files for machine learning algorithm



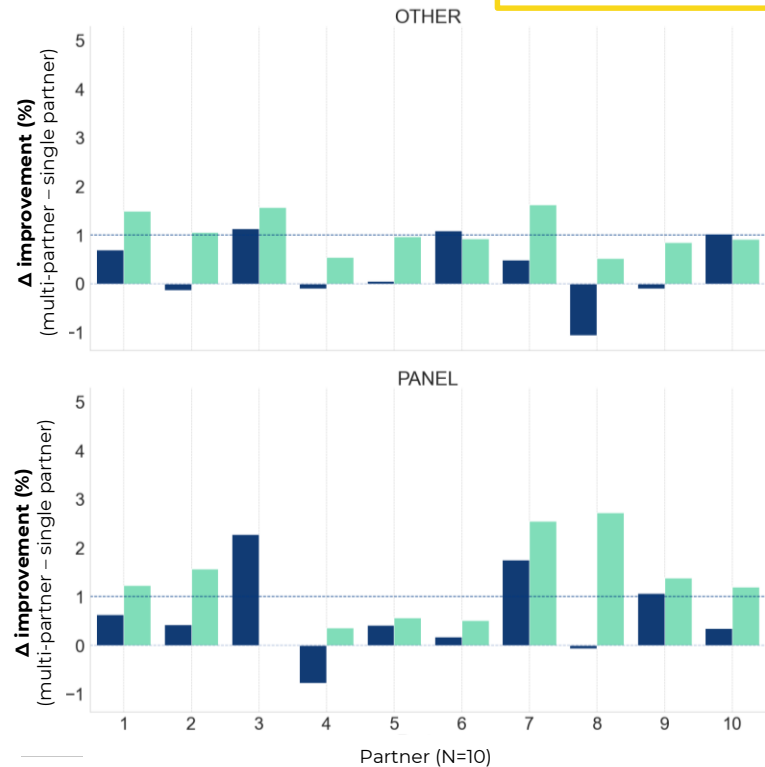
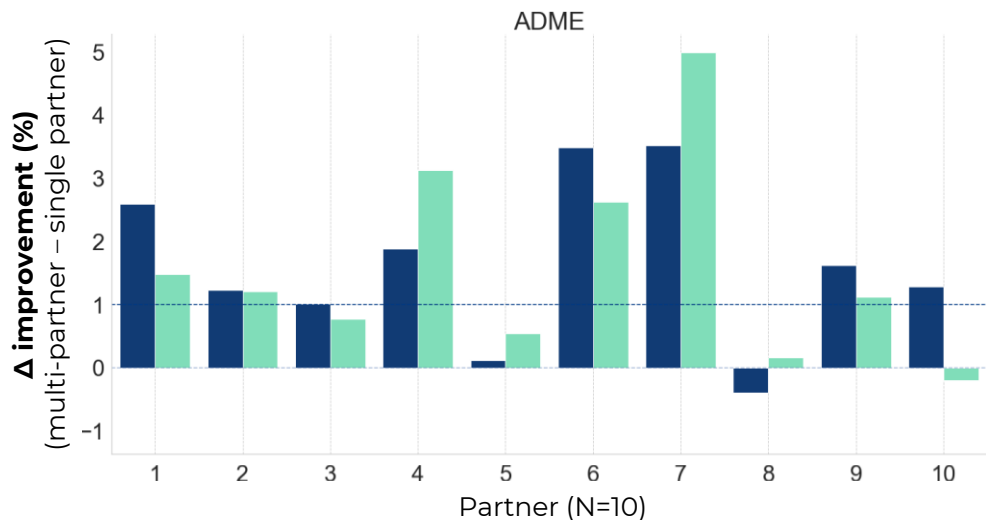
- Guarantee uniform processing within consortium while preserving privacy of partner's data

MELLODDY technology stack



2nd federated learning run: success

Evidence of federated model superiority



Average 1.63% delta AUC-PR improvement for ADME (SD 0.013).

Access to MELLODDY technology

MELLODDY project June 2019 – May 2022

- Public-private research initiative
- Build operational platform, using Open Source where sensible
- Scientific and business case assessment in specific context of pharma discovery
- No longer accepting new partner enquiries (melloddy.eu > about > partners)

Post-project sustainability

- Intention to offer platform as service-for-fee
- Platform and infrastructure are data and model agnostic: opportunities for deployment beyond discovery in pharma, and beyond pharma
- Discuss future application opportunities? (melloddy.eu > contact)