

Intelligent Automation System in Autonomous Chemistry Lab

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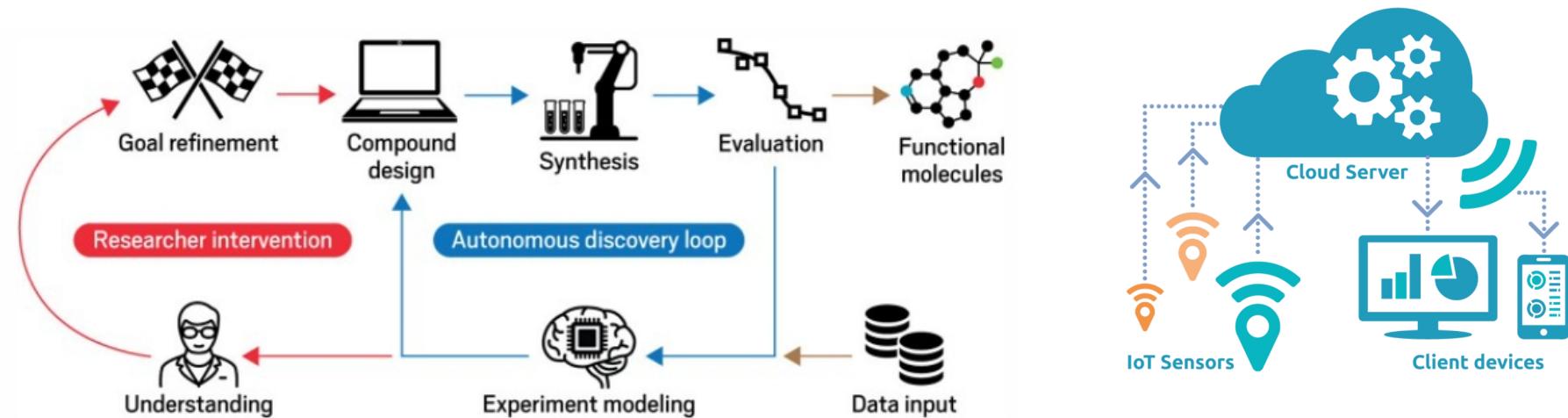
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- *Overview*
- *Automation (IAS)*
- *Case study*
- *Conclusion*

Intelligent Automation System:

Intelligent Automation System (IAS) is a combination of Robotic Process Automation (RPA) and Artificial Intelligence (AI) technologies which together empower rapid end-to-end process automation and accelerate digital transformation.

Certainly, it would make a huge impact on chemistry automation.



Intelligent Automation System:

Intelligent Automation System (IAS) can be divided into two main parts:
Automation and AI.

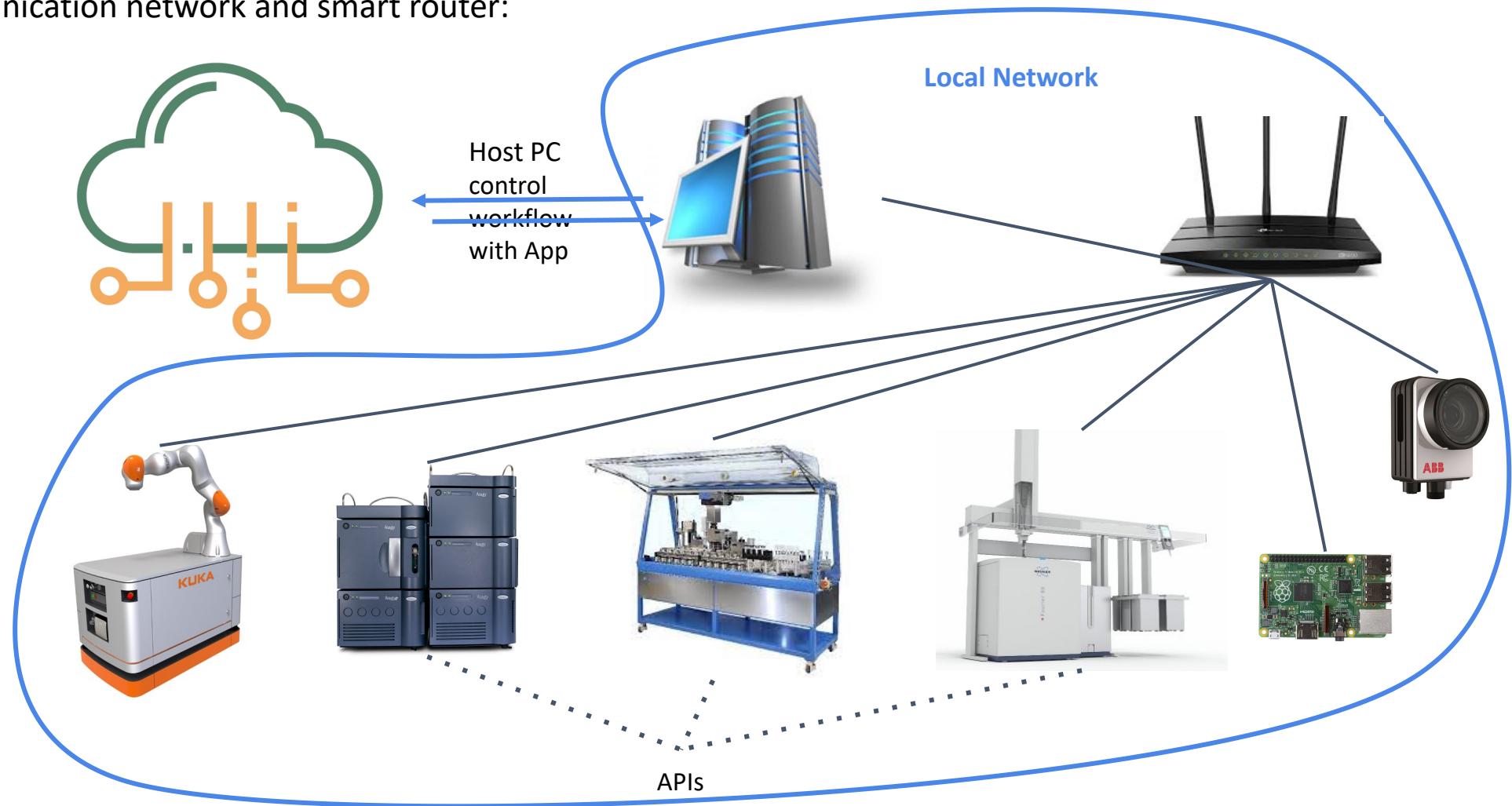


Smart entities in Autonomous Chemistry Lab (ACL):



Automation(IAS) in ACL:

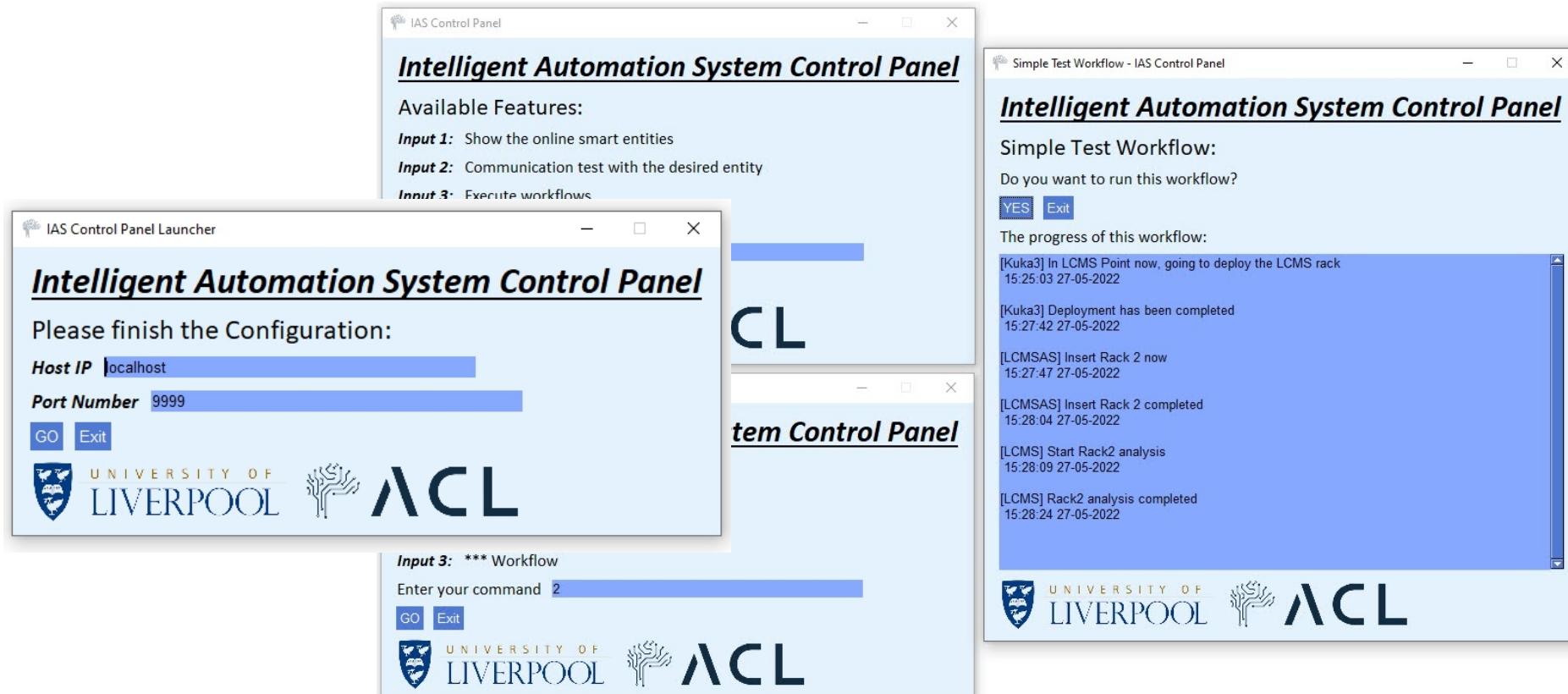
—Communication network and smart router:



Automation(IAS) in ACL:

—Intelligent Automation System Control Panel (App):

This App could run on most Windows 10 PC, no other dependencies are required.



Automation(IAS) in ACL:

—Kuka works with LCMS:



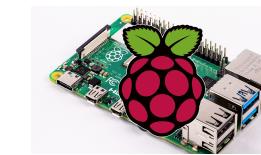
Automation(IAS) in ACL:

—Kuka works with LCMS:



Automation(IAS) in ACL:

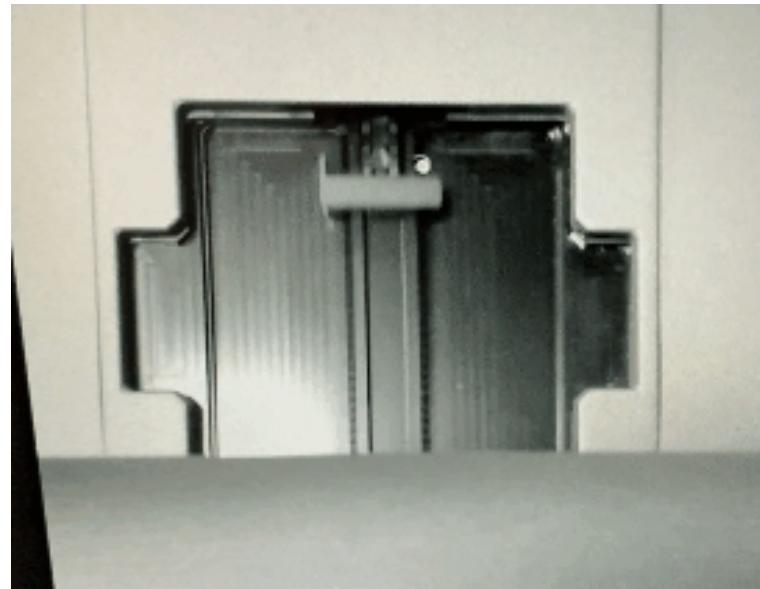
—The closed-loop Chemspeed and Kuka implementation:



Automation(IAS) in ACL:

—Safety monitoring:

Camera network system design for monitoring the key parts of workflow



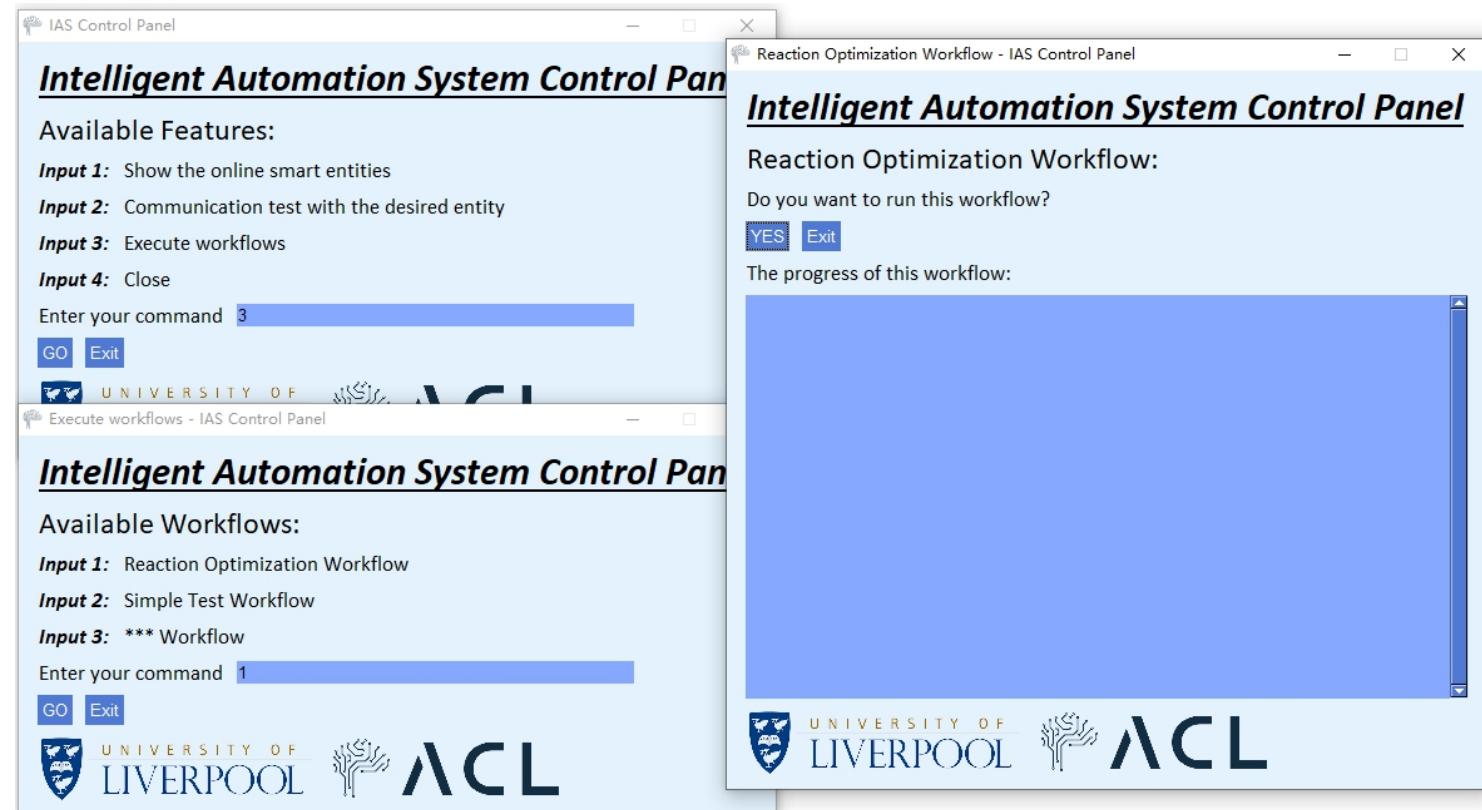
Automation(IAS) in ACL:

—Safety monitoring:

Light curtains system design for monitoring the key parts of workflow



Demo video for parts of the robotic workflow:



Demo video for parts of the robotic workflow:



Thank you