

Example: OpentronsAI is a vision-language-action AI model.

Scientific intent → **protocol** → **visualization** → **optimization** → **validation** → execution.



→ Opentrons utilizes AI tools to simplify interaction between scientist and liquid handling robots



Existing AI infrastructure

Scientist writes its intent in natural language

Application, hardware, consumables, reagents

OpentronsAI writes and visualizes protocol

Deck layout, reagent placement, process

Scientist further optimize protocol

Upload documents that may add value (e.g., kit manual)

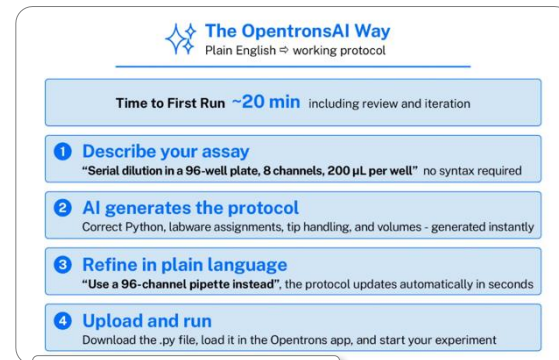
Execution of the run with Flex robot

OpentronsAI translates to a code

From natural language to robot language (Python)

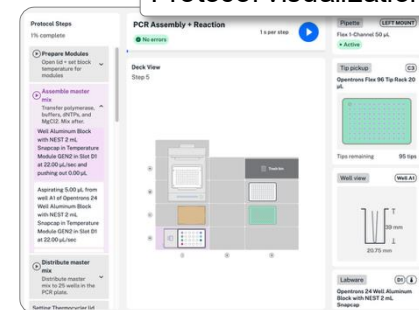
Scientist reviews and validates the protocol

Check technical and scientific validity



OpentronsAI workflow

Protocol visualization



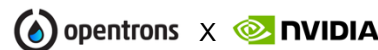
Further AI developments



Partnership for AI Agent-to-Agent lab automation workflow (e.g., enabling multi-instrument natural language use)



Camera on robot deck that loop back to OpentronsAI images to provide monitoring of the run



Partnership with NVIDIA to build models that would allow fully autonomous experiments and labs

Watch Opentrons CEO speak about AI tools on SLAS 2026

