

## OPENQUANTIFY PROJECT:

# **FINAL ELECTRONICS & DIGITAL TWINS PIPELINE INTEGRATION**

## ROAD MAP NEXT 2 MONTHS

### **PHASES**

#### **Phase 1 — Digital-Twin Integration (2 weeks DUE 12th July 2025)**

[https://www.openquantify.com/digital\\_twin](https://www.openquantify.com/digital_twin)

You need to adapt your platform from onboarding (task 1 and 2) for a 3d digital twin solution.  
Make sure you add a 3d feature an AI Agent or Client can use.  
After, start on robotics & IOT simulations.

USE CESIUM JS MAKE SURE TO UPLOAD YOUR OBJECTS TO CESIUM ION FIRST.

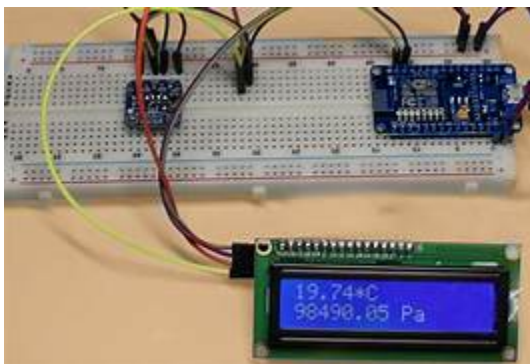
<https://cesium.com/learn/cesiumjs-learn/cesiumjs-quickstart/>

Whenever you need to upload a document or object file, put it in whatsapp and then give us a heads up so we can upload it to Cesium Ion Backend.



**Goal:** Stand-up a high-fidelity virtual replica of the digital twin and its operating environment for robotics simulations.

- Consolidate mechanical CAD, kinematics, and dynamic parameters in our custom CESIUMJS physics engine. For example: make a motor spin, make a robot move, integrate physics. You can also prototype with integrating it within Isaac Sim or Unreal Engine as well as within Cesium JS.
- Stream real sensor/actuator data through middleware (ROS 2, DDS) for hardware-in-the-loop (HIL) testing. You can use AI to create synthetic data for simulations. For example: simulate arduino temperature feed as the arduino board does.



- Build orchestration scripts + dashboards with AI Agents so the client can intelligently prompt to control the system.

- BUILD IDE INTEGRATION SO USER CAN BUILD CODE ON THEIR SIMULATION AND ALSO CONTROL SERVER AND CLIENT FUNCTIONS. AI AGENTS SHOULD BE ABLE TO DEVELOP CODE INJECTIONS AS WELL.



Eventually users can load their saved templates and share with the community what they have been working on. This is how we open source our project and allow the entire community to develop.

2 week process

## Phase 2 — Electronic Schematic Excellence (2 weeks DUE 26th July 2025)

[https://www.openqquantify.com/multi\\_agent\\_llm\\_page](https://www.openqquantify.com/multi_agent_llm_page)

**Goal:** Finalize robust, manufacturable electronics that match the twin's I/O model.

- Capture schematics for MCU/SoC, power rails, and sensor break-outs.
- Enforce signal-integrity, EMC, and safety rulesets; auto-generate BOM & DFM checks.
- Add lots of Electronics Engineering Knowledge to ensure good schematic generation and design. Allow custom user interactions and modeling as well as AI agent based interactions and modeling. Give user a lot of control.
- Generate 2d models for development boards and sensors of all types (arduino, nvidia jetson, beaglebone, etc)

build a drone

Build a drone for agriculture purposes.

 Build Project

Build an agriculture drone for watering plants

An autonomous drone designed to monitor environmental conditions and water plants using a submersible pump.

## Agriculture Drone for Watering Plants build-guide

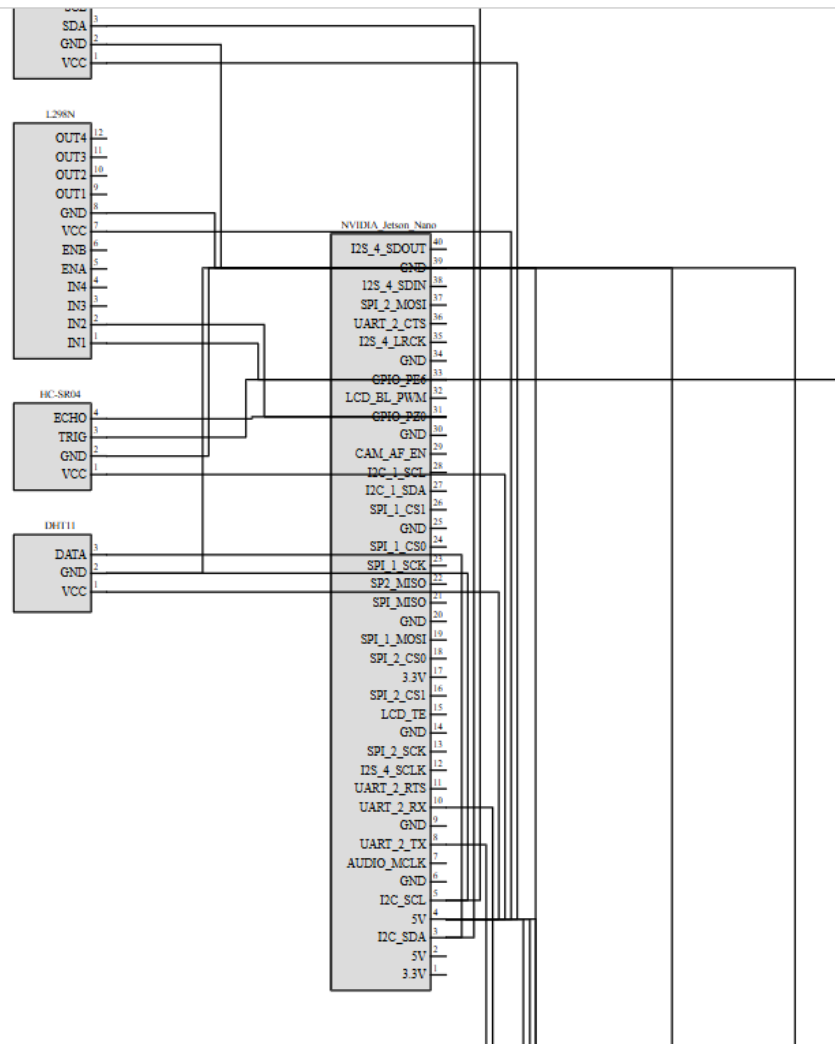


### Gather Materials

- Jetson Nano (4 GB) module + carrier board
- microSD card ≥ 16 GB, UHS-I, flashed later with JetPack image
- 5 V → 4 A barrel-jack PSU or USB-C PD trigger cable (if using rev B)
- HDMI/DP monitor, USB keyboard & mouse, USB A-to-micro-B cable for serial
- Any sensors/actuators from the spec, jumpers, standoffs, chassis parts
- Host PC with balenaEtcher + 7-Zip, and the latest JetPack SD-card image



### Assembly



Make sure that we have the ability to simulate circuits and builds on multiple boards and electronics. Add as many schemas as you need to so we have a full directory of lots of boards users can try.

2 week process

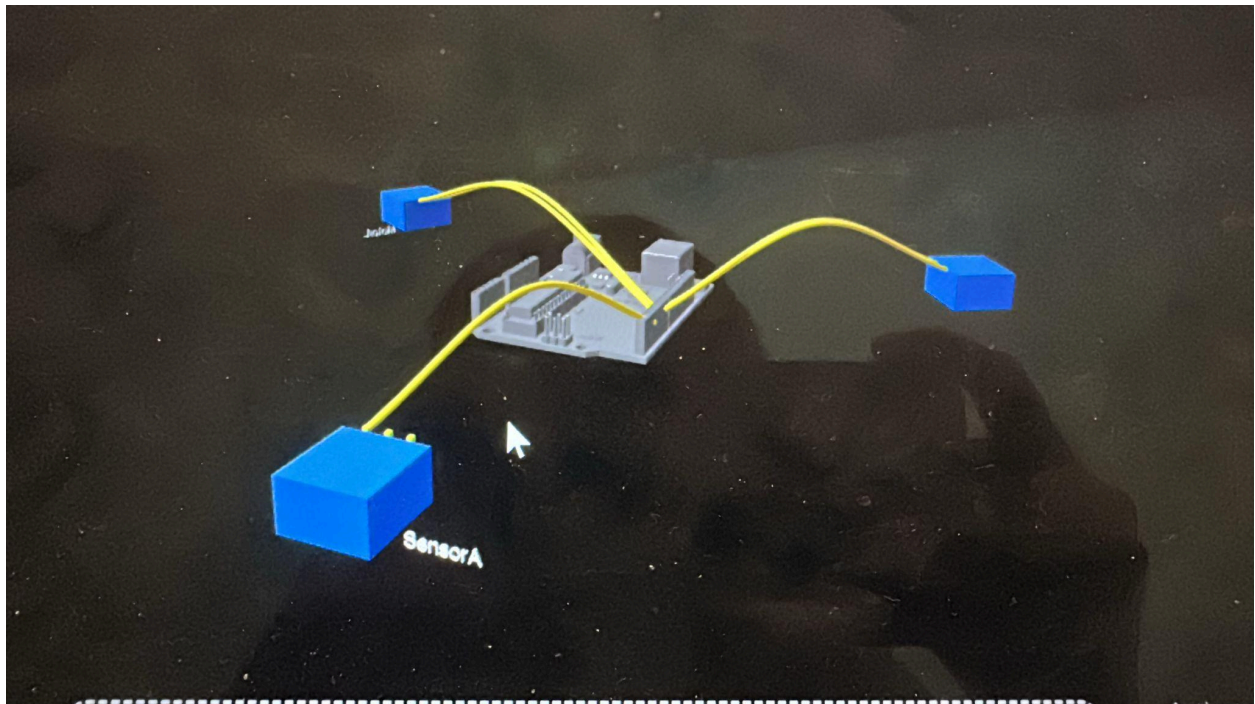
### Phase 3 — 2-D → 3-D Conversion & Plug-In (2 weeks DUE 9th August 2025)

[https://www.openqquantify.com/Game\\_engine\\_page](https://www.openqquantify.com/Game_engine_page)

[https://www.openqquantify.com/digital\\_twin](https://www.openqquantify.com/digital_twin)

**Goal:** Synchronize the physical PCB/assembly with the virtual twin to co-simulate mechanics *and* electronics.

- Export 3-D OBJ FILES of the entire schematics
- Map electrical states (voltage, current, faults) to simulated sensors/actuators for power-aware physics.
- Validate enclosure fit, thermal budgets, servicing clearances, and EMI coupling inside the twin before first article build. And make sure to integrate within the digital twin



2 week process



## **Phase 4: Bill of Materials and Electronics Marketplace (DUE 9th August 2025)**

Create a Bill of Material and Marketplace and Allow users to buy the Material through our Electronics Marketplace where we are going to charge an extra 10% on our products (Intel, Nvidia, etc) and we will eventually try to become preferred vendors.

2 week process

## **Phase 5: Website Redesign (DUE 9th August 2025)**

Make the website look amazing! Redesign the front end HTML pages to look flawless! Combine all the membership, cryptocurrency and donations page only in 1 html page.

2 week process

## **Phase 6: Marketing and Promotions (DUE 9th August 2025)**

Network and attract clients and partners on behalf of OpenQQuantify.

2 week process

Please Fill out this Google Sheet with your name under the Phase(s) you want to work on and also list a description of what you are going to do.

USERS CAN WORK ON MULTIPLE PHASES ALL AT ONCE JUST MAKE SURE THE WORK GETS COMPLETED AND NOT LEFT OUT.

We preferably want to finish this project within 1 month. We hope that users can work on all phases at the same time so we can complete it asap.

[https://docs.google.com/spreadsheets/d/1PWodH4Ae1jspA0MvXP2RvCI2c3IHnbP20\\_DyI4paAf0/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1PWodH4Ae1jspA0MvXP2RvCI2c3IHnbP20_DyI4paAf0/edit?usp=sharing)

**After picking out your phase, send Paul Savluc a Private message so you can get onboarded promptly.**

**Our infrastructure build works like this:**

**Client goes to this page and asks a question about a device they want to build and they start building on it:**

**[https://www.openqquantify.com/multi\\_agent\\_llm\\_page](https://www.openqquantify.com/multi_agent_llm_page)**



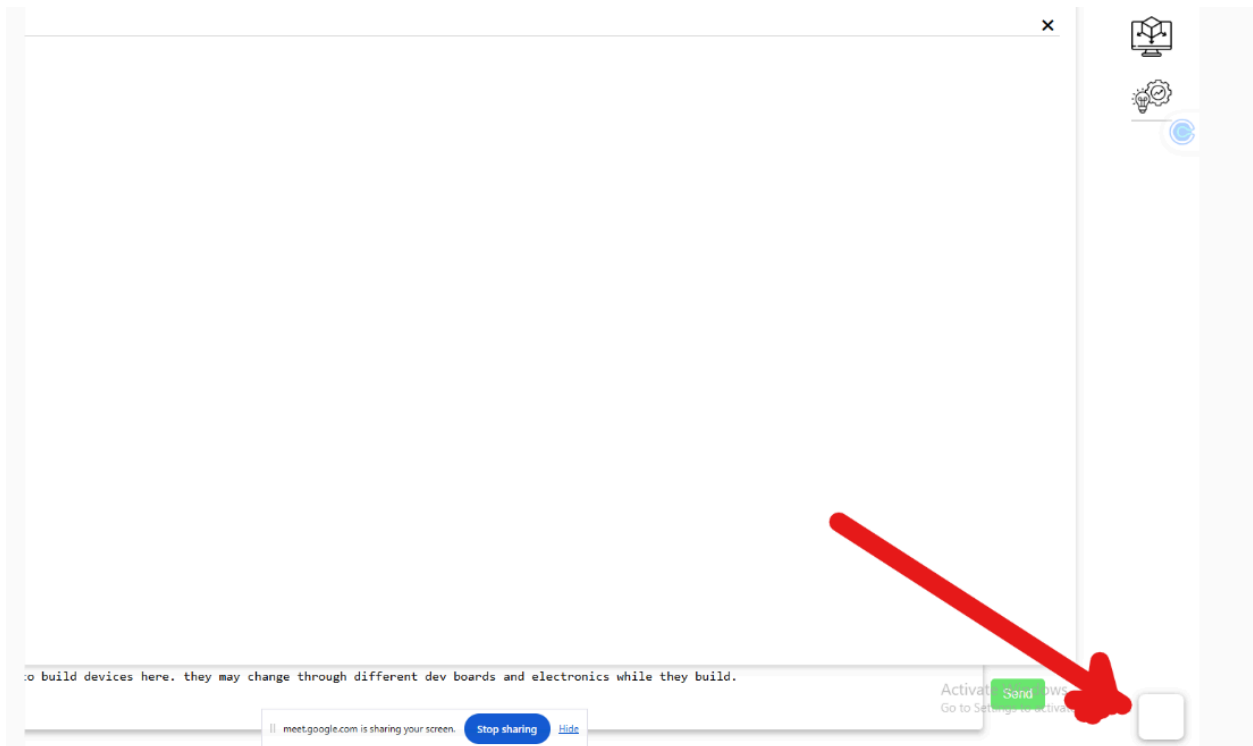
**Schematics are on the top right.**

**Code generated is right under the Schematics button at the top right.**



At the bottom right there is a button to go into 3d modeling:

[https://www.openqquantify.com/Game\\_engine\\_page](https://www.openqquantify.com/Game_engine_page)

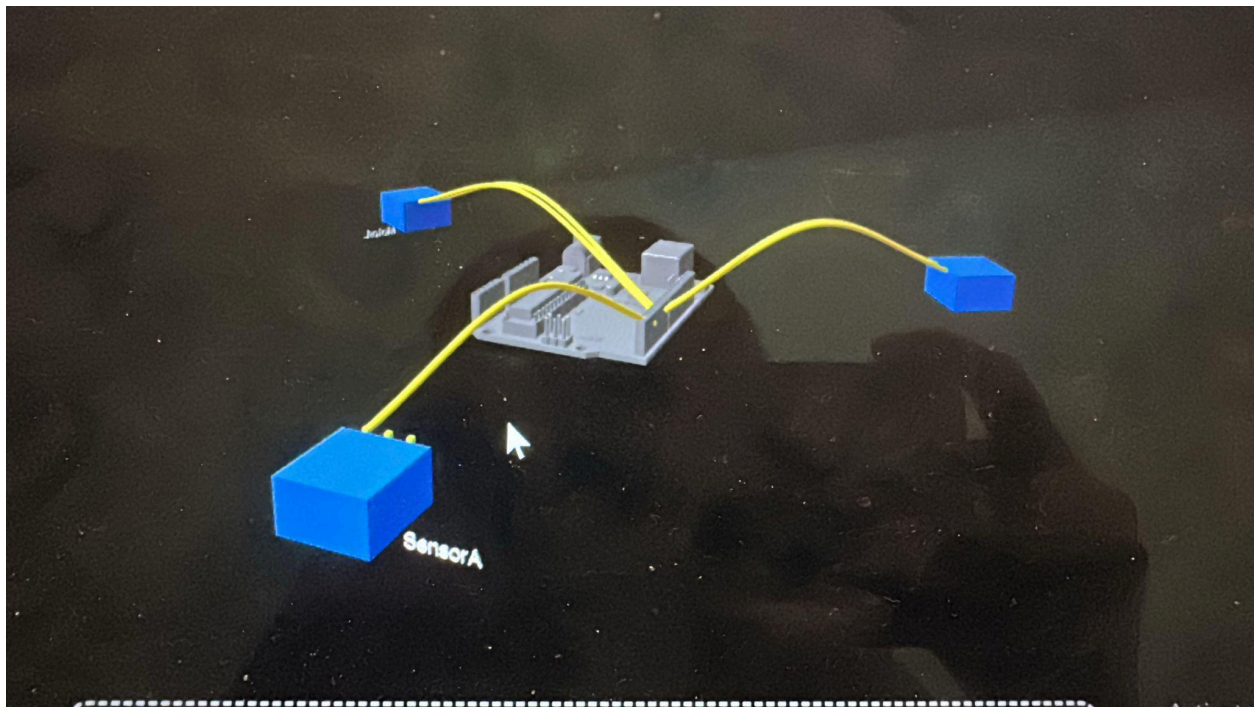


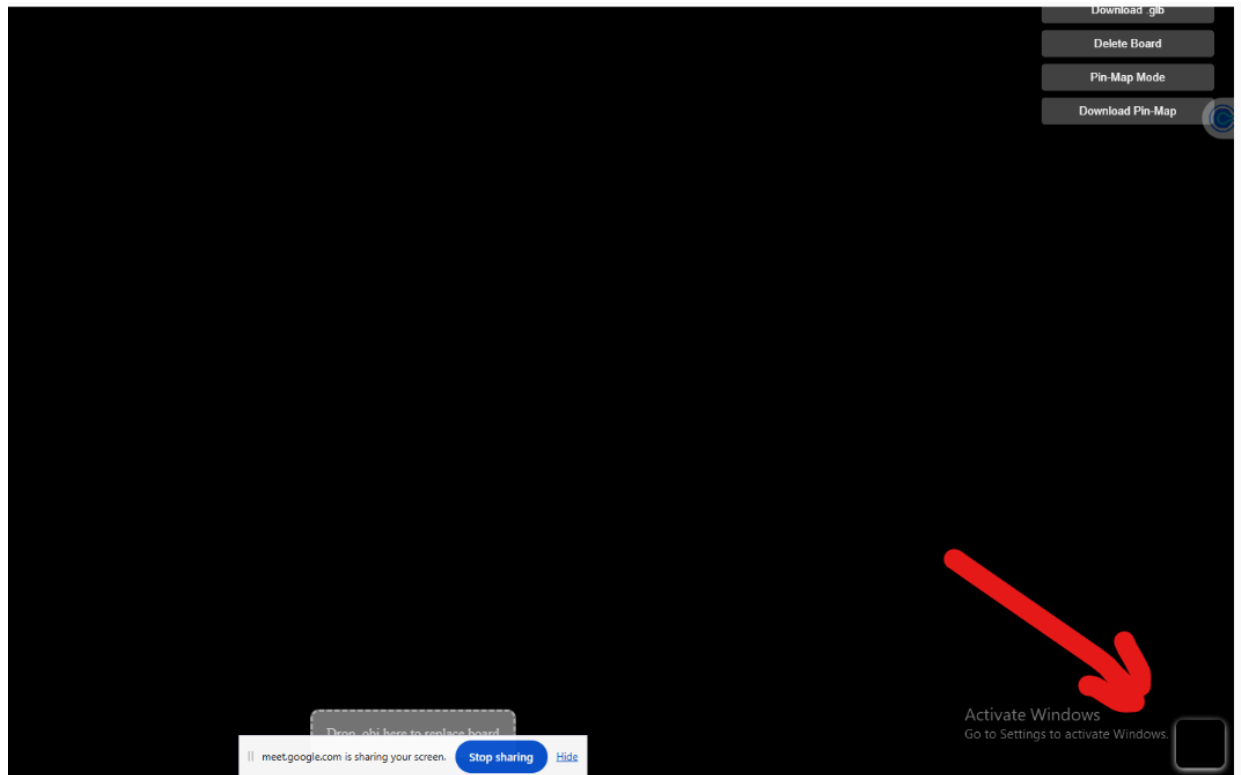


From the 3d modeling page you can then plug in the entire machine you have developed within digital twins:

[https://www.openqquantify.com/digital\\_twins](https://www.openqquantify.com/digital_twins)

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Then users can see the machines they have built within digital twins:

[https://www.openquantify.com/digital\\_twins](https://www.openquantify.com/digital_twins)

