

Welcome

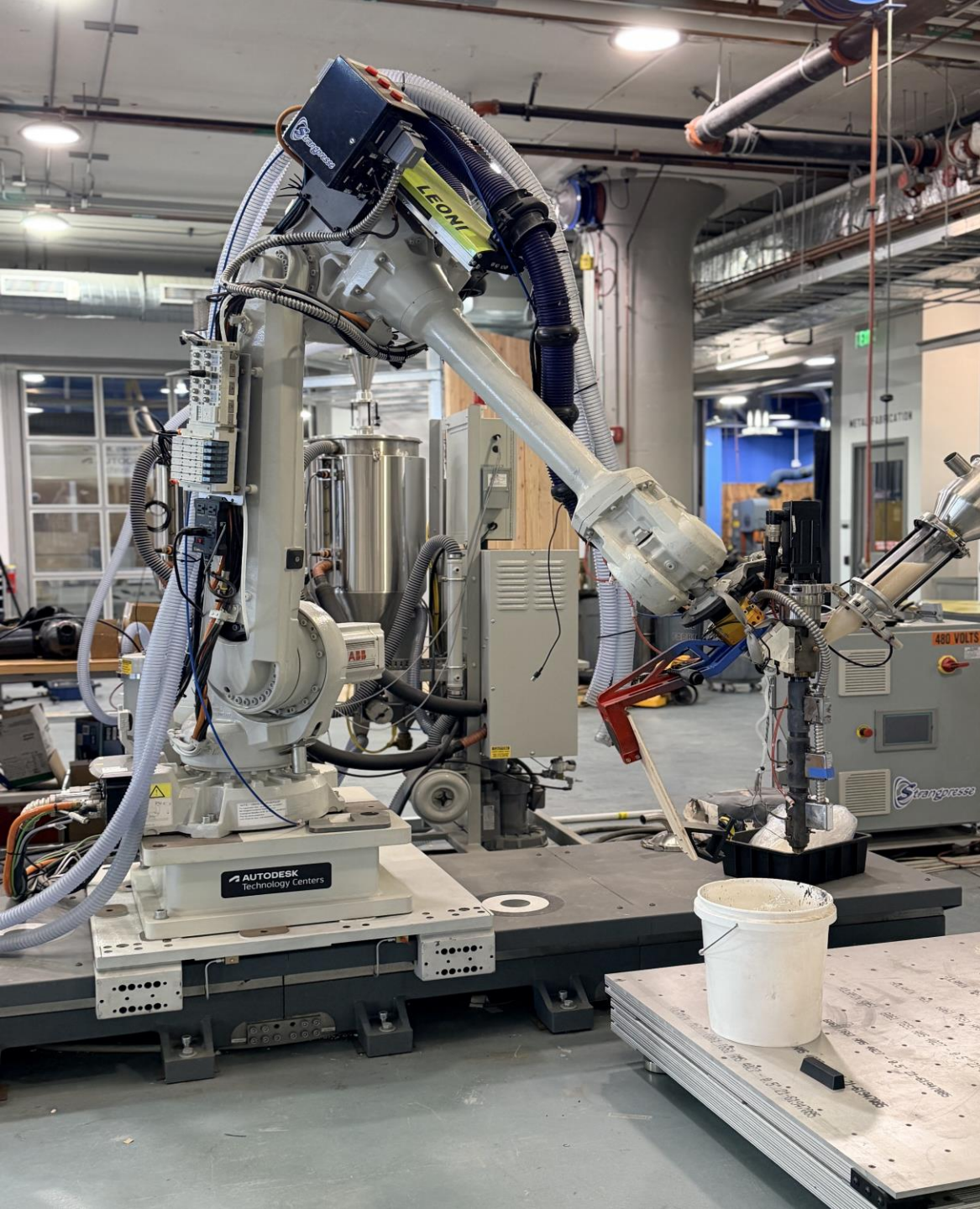


Digital Transformations

And achieving it

© 2026 Autodesk. All rights reserved.





Boston Technology Center

Today's Agenda

01

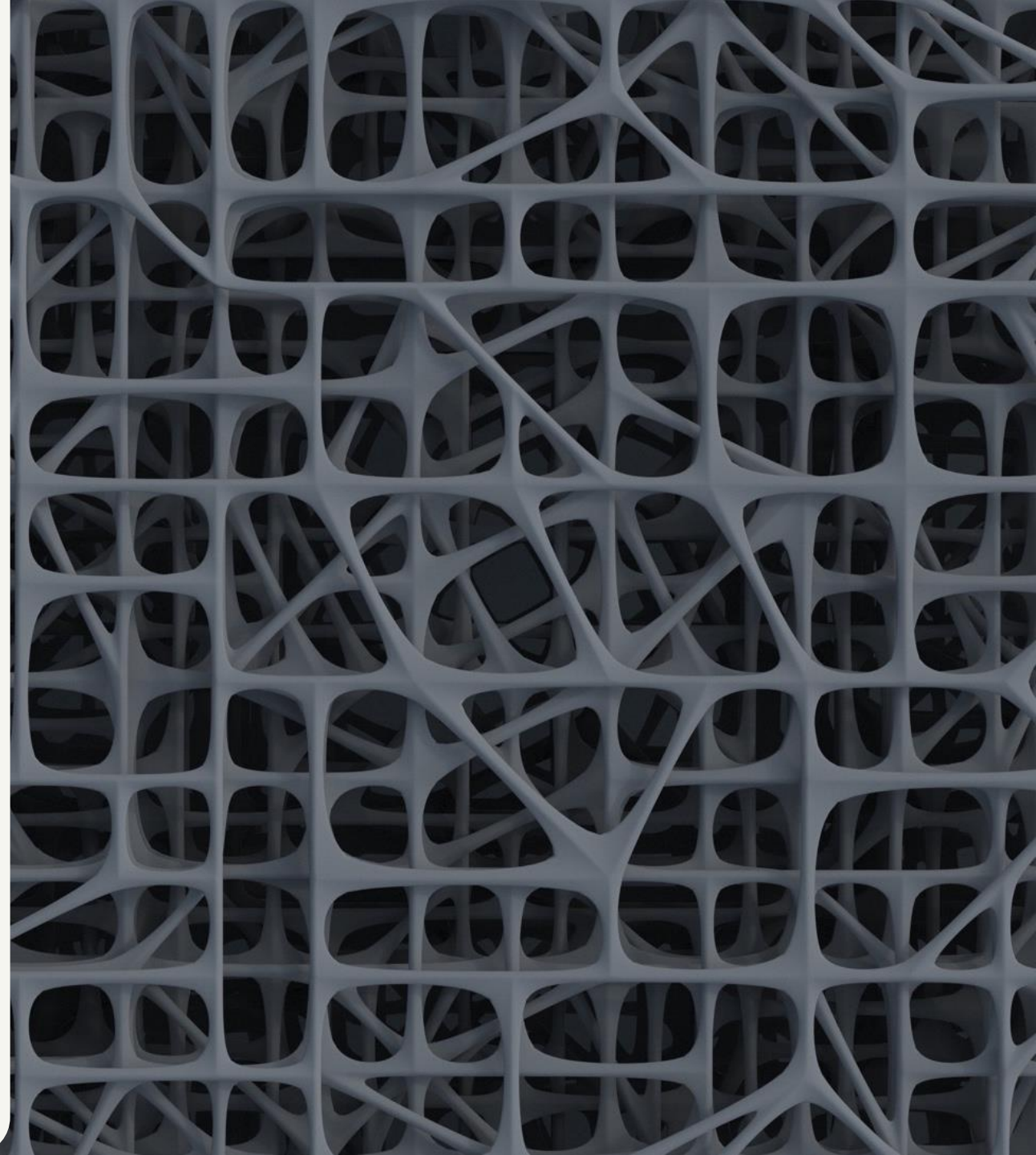
Digital Twins?

02

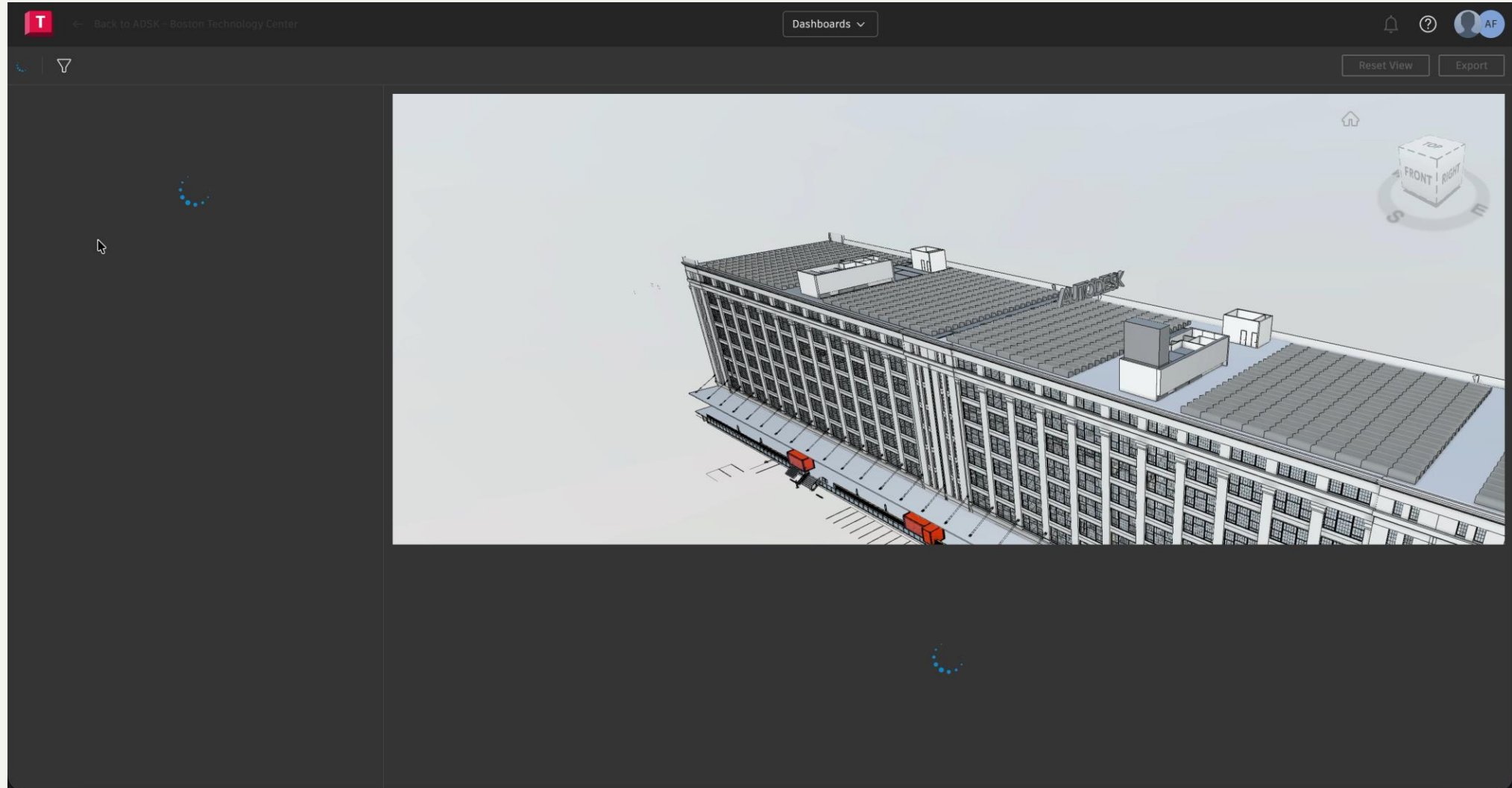
"Hacking" Printers

03

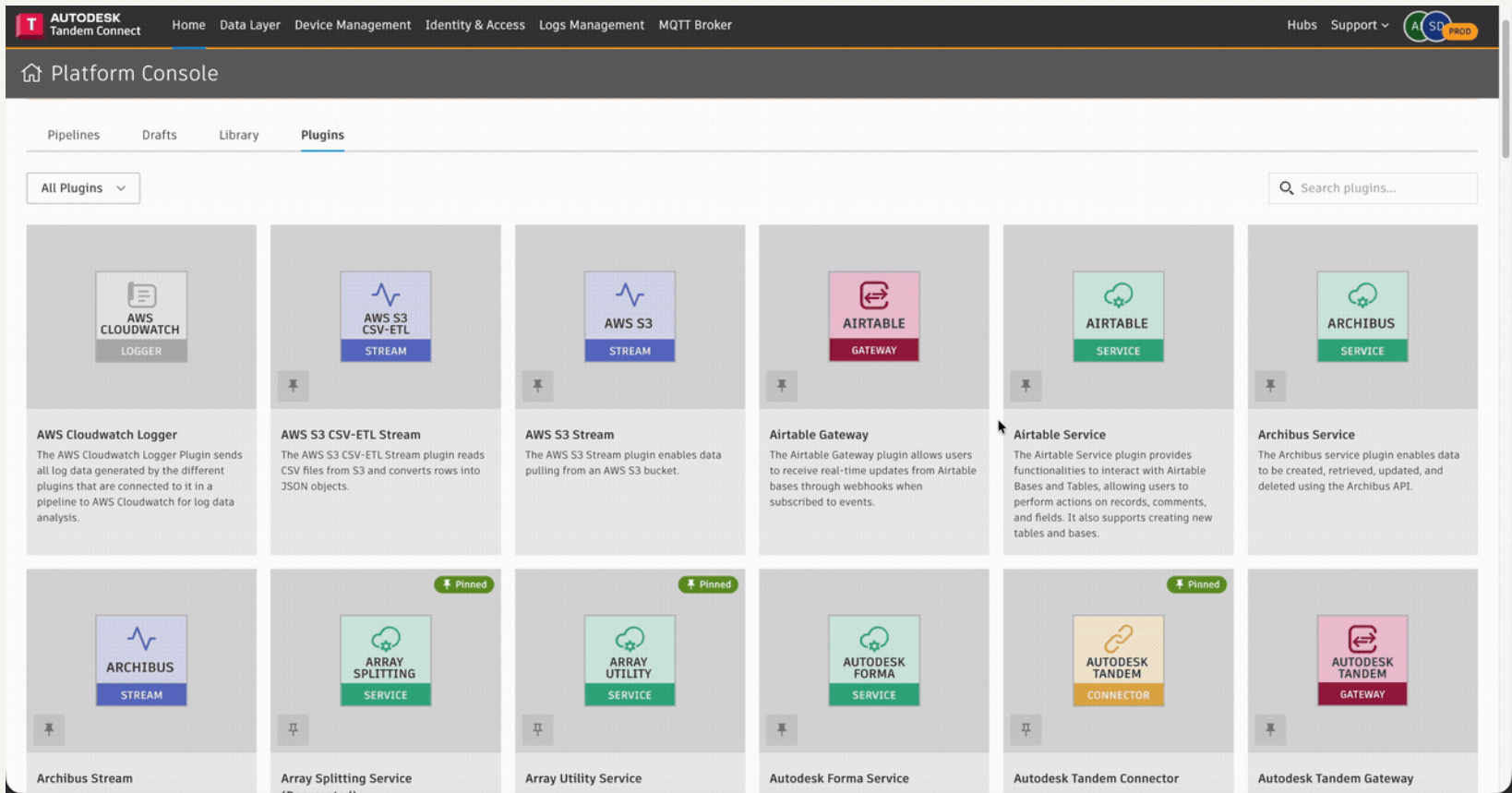
"Hacking" Machines



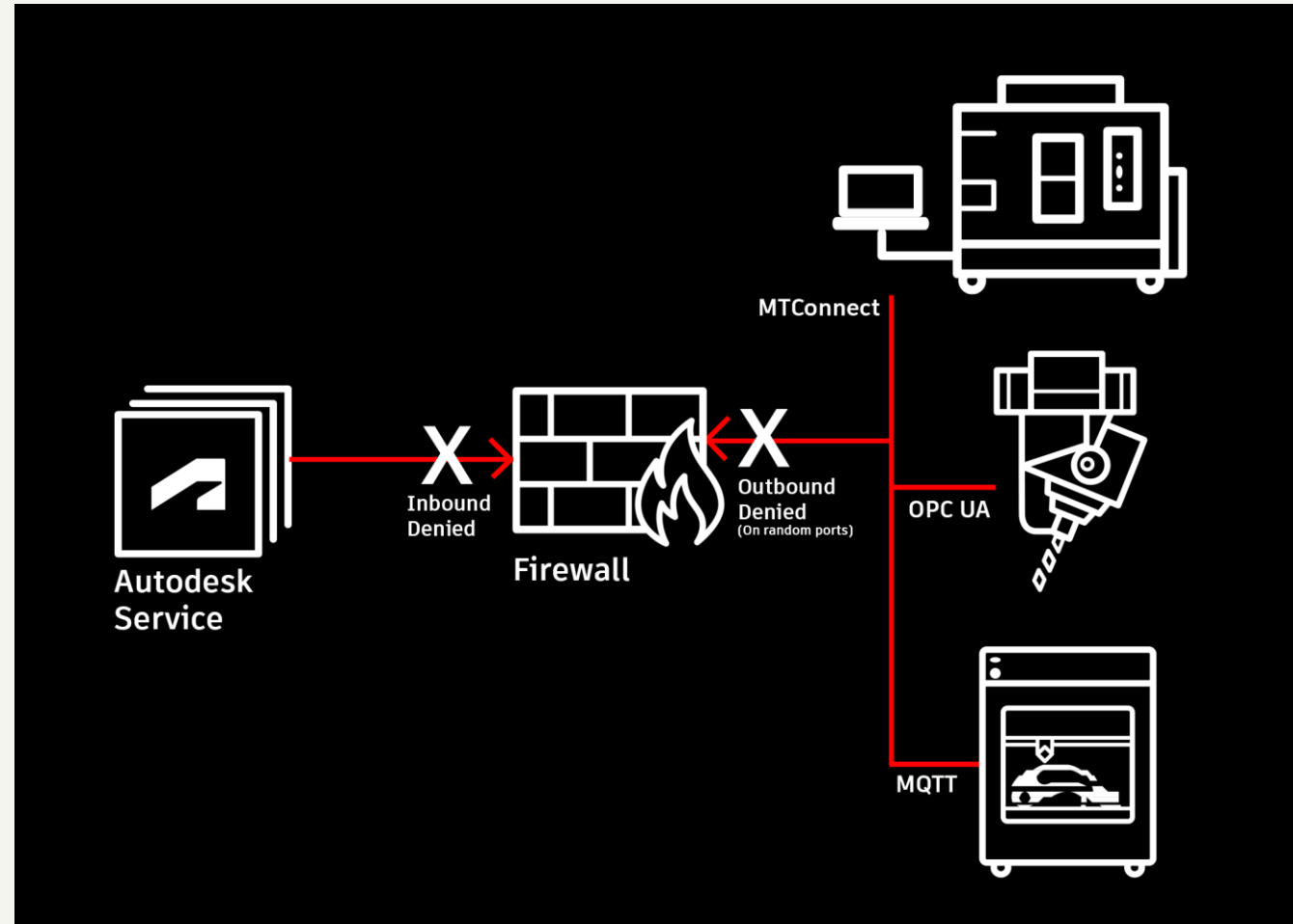
Digital Twins?



Many Protocols



Much Security



First Target



First Target

Read



First Target

Read

MQTT:8883

Hey, give data NOW!!

*And keep giving data
if you know what's
good for you*



First Target

Read

MQTT:8883

Payloads:

```
-----  
AI Print Halt: "true"  
Camera URL:  
"rtsp://10.141.46.72:322/streamir  
Timelapse: "disable"  
WiFi Signal: "-70dBm"  
WiFi Signal dBm: -70  
SD Card: "true"  
Chamber Light: "on"  
Work Light: "flashing"  
AMS Unit Count: 0  
VT Filament Type: "PLA"  
VT Filament Color: "#161616"  
VT Color R: 22  
VT Color G: 22  
VT Color B: 22  
VT Nozzle Min C: 190  
VT Nozzle Max C: 240  
VT Remain %: 0  
timestamp: 1790879748351  
id: "874s0Sf-  
Q9qwV8AaUozmgAAAAA"
```



First Target

Read



First Target

PRINT

PRINT THIS NOW!

:990
:8883

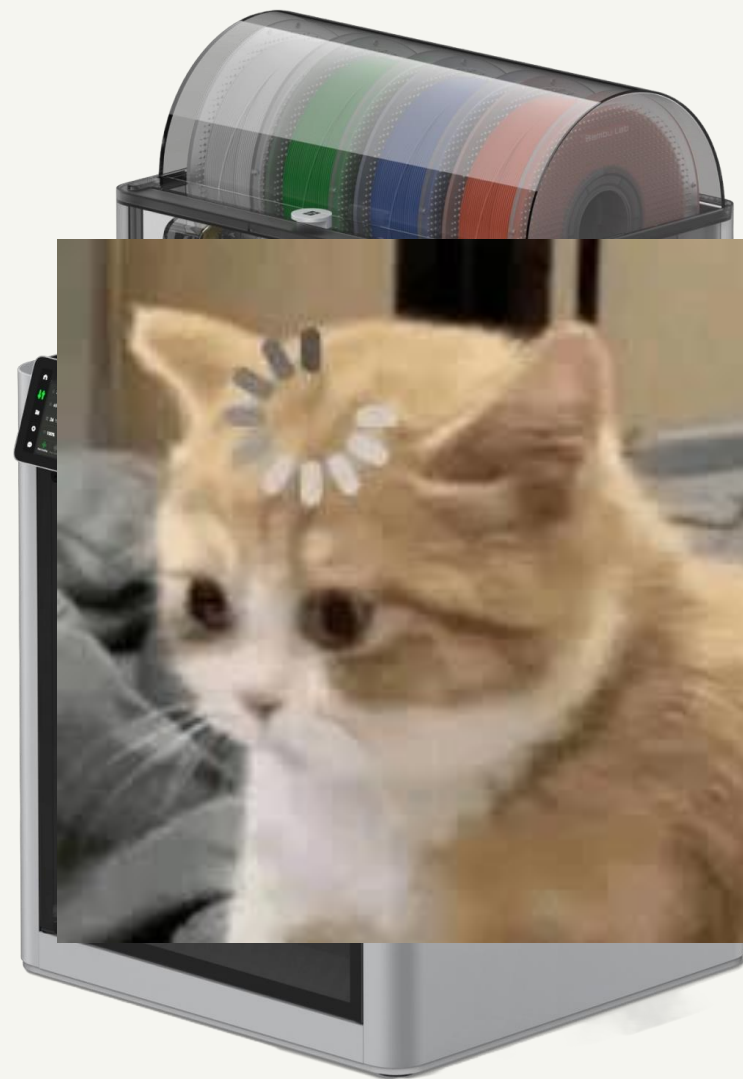


First Target

PRINT

PRINT THIS NOW!

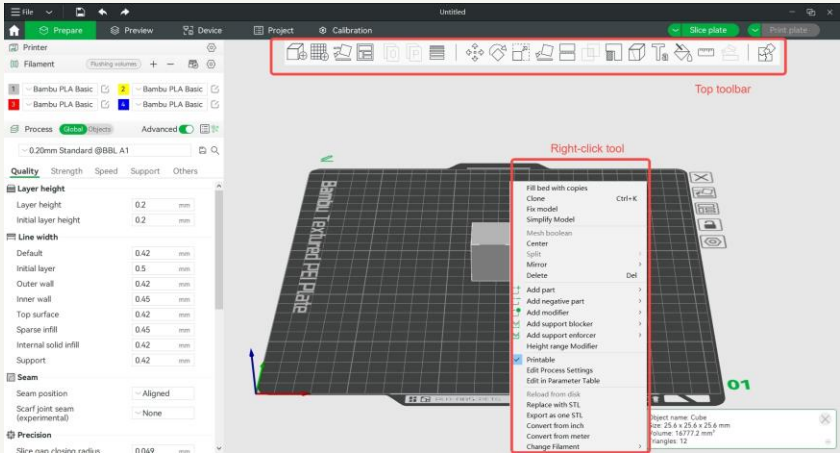
:990
:8883



First Target

PRINT

PRINT THIS NOW!



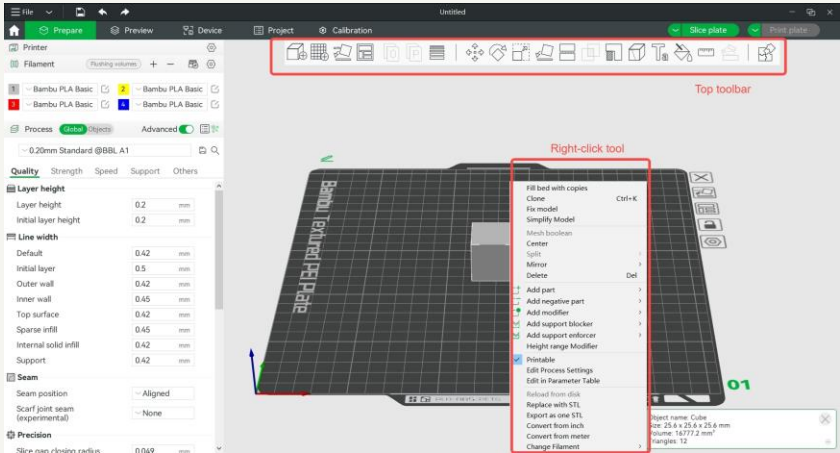
Print pweeze UwU



First Target

PRINT

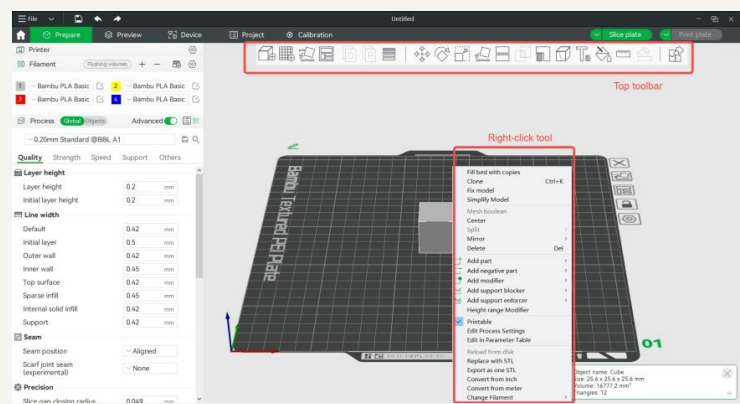
PRINT THIS NOW!



Print pweeze UwU

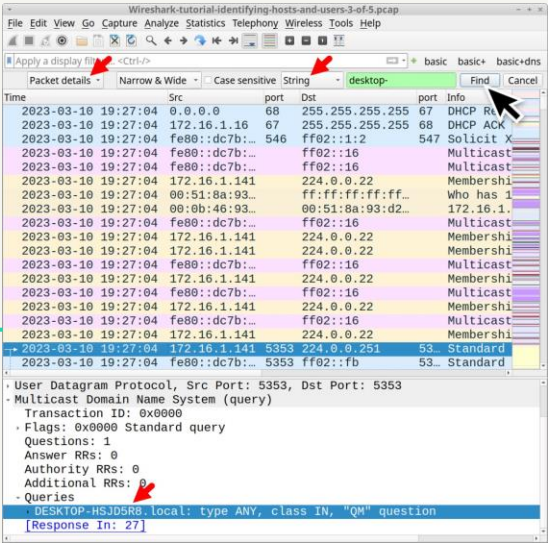


Man In The Middle



Bambu Studios

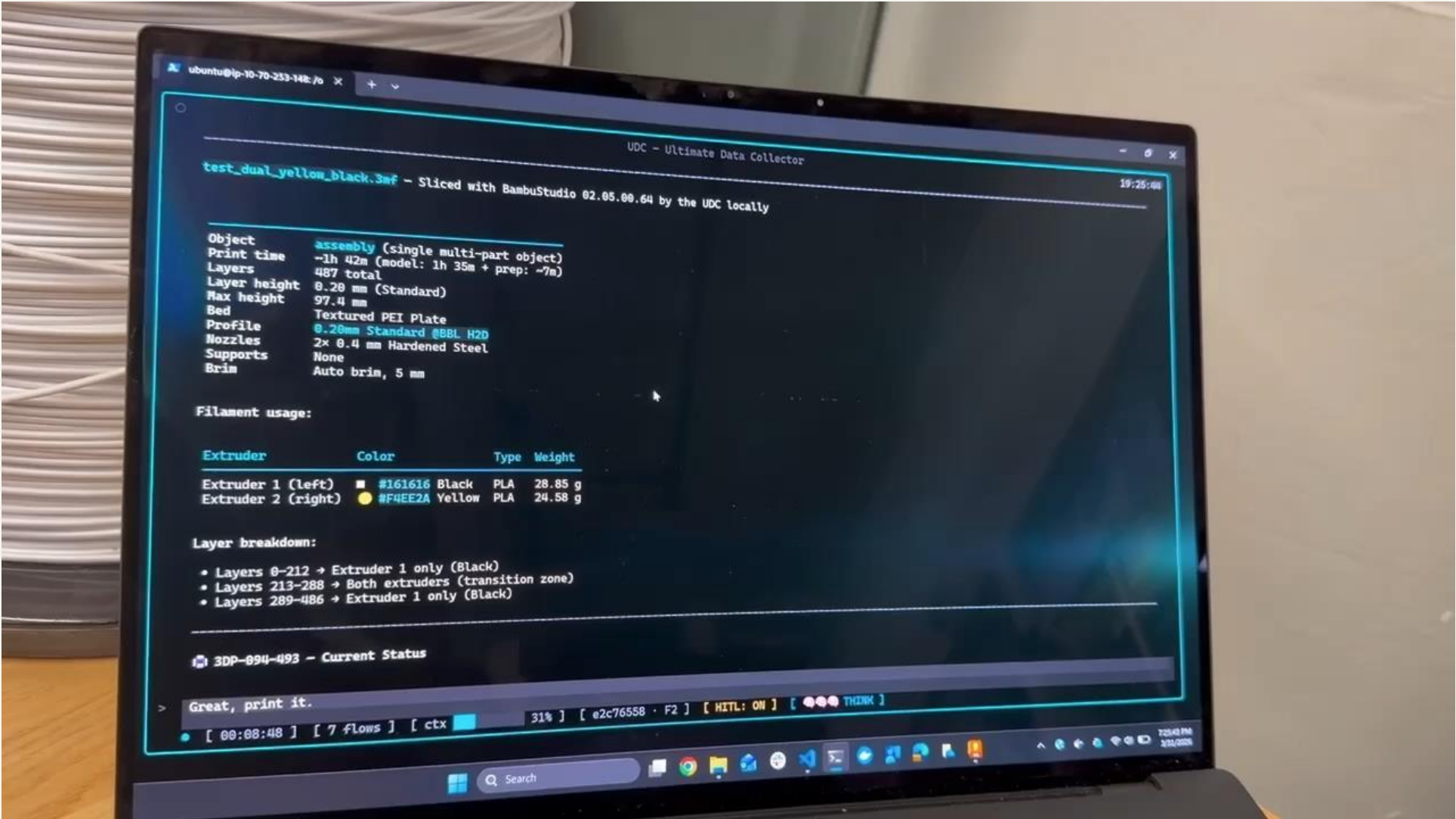
WireShark



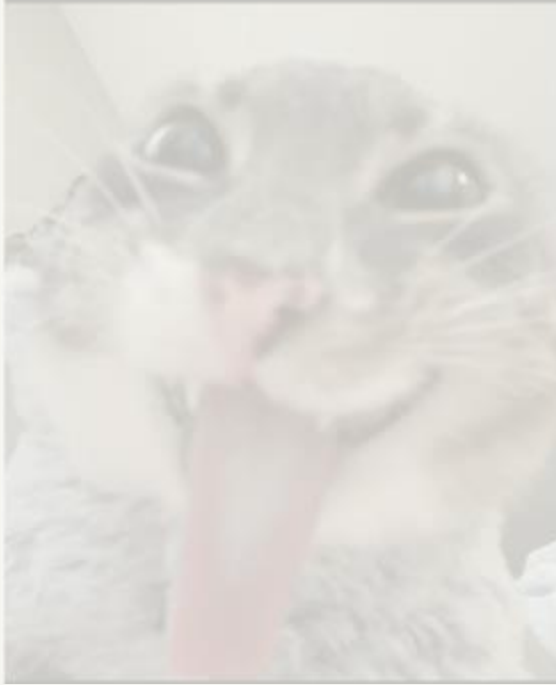
Yummy unencrypted network traffic



Hecked Successfully



Second Target



Second Target

Read

MTConnect

IPAddress:8082/current

<http://10.141.44.35:8082/current>



Second Target

Read

← MTConnect
IPAddress:8082/current
http://10.141.44.35:8082/current

Field	Value
Time (UTC)	2026-09-10 20:44:26
HTTP status / round-trip	200 / 843 ms
MTConnect sequence	42309
X / Y / Z (mm)	-280.99993 / -178.45317 / -42.16739
Spindle speed	0 RPM
Run status	STOPPED
Mode / motion	AUTOMATIC / RAPID
Feed / rapid / spindle override	100% / 25% / 100%
Tool	T 0.0787
Program	009833, 5500.nc
E-stop	ARMED
Alarms	NO ACTIVE ALARMS
Active G-codes	G00, G17, G90, G94, G20, G40, G43, G80, G98, G99, G54, G269, G64, G69, G170, G255



Give up?

Read

MTConnect

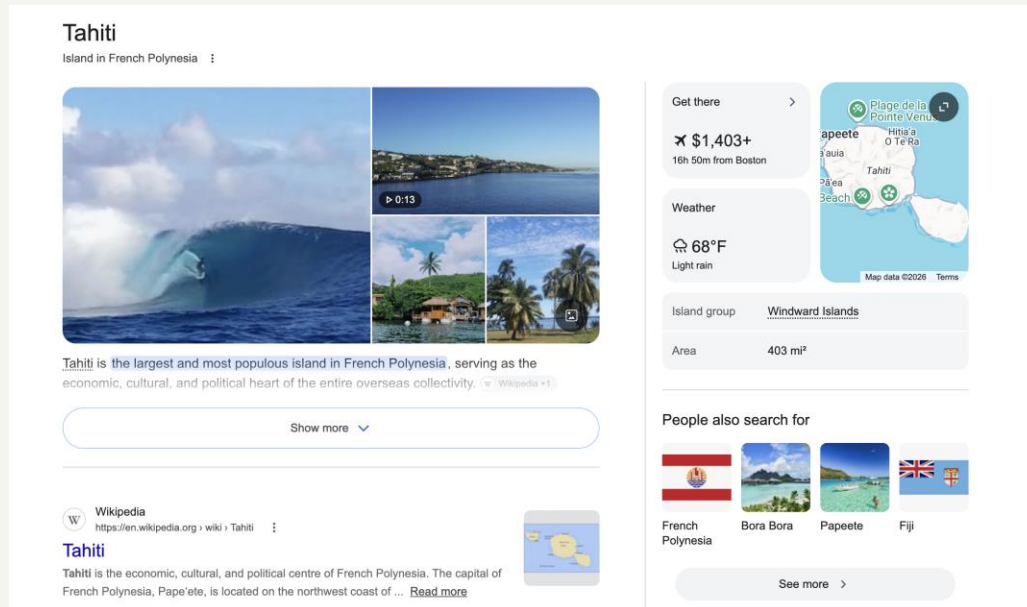
IPAddress:8082/current
http://10.141.44.35:8082/current

Field	Value
Time (UTC)	2026-09-10 20:44:26
HTTP status / round-trip	200 / 843 ms
MTConnect sequence	42309
X / Y / Z (mm)	-280.99993 / -178.45317 / -42.16739
Spindle speed	0 RPM
Run status	STOPPED
Mode / motion	AUTOMATIC / RAPID
Feed / rapid / spindle override	100% / 25% / 100%
Tool	T 0.0787
Program	O09833, 5500.nc
E-stop	ARMED
Alarms	NO ACTIVE ALARMS
Active G-codes	G00, G17, G90, G94, G20, G40, G43, G80, G98, G54, G269, G64, G69, G170, G255



What else?

Control Remotely from anywhere in the world



MACHINE NOW!



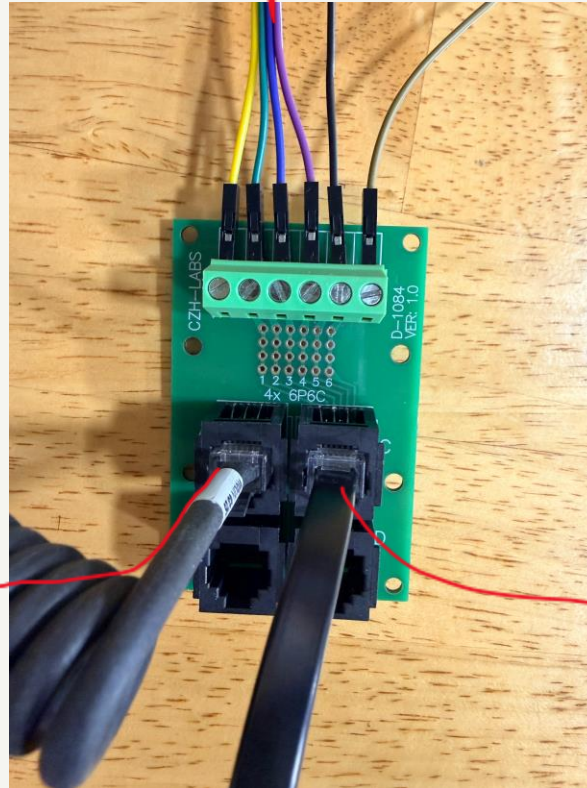
Hint



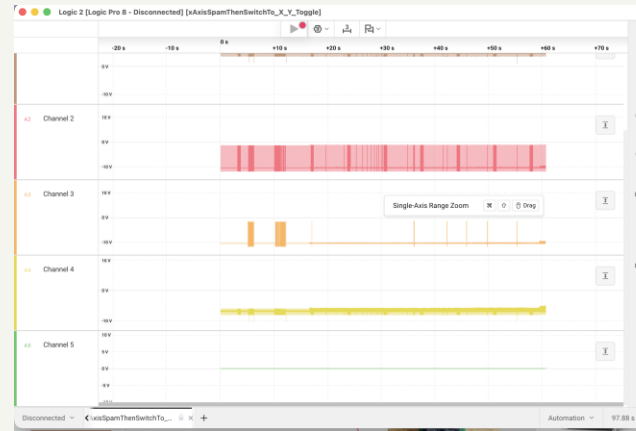
(heavy breathing)



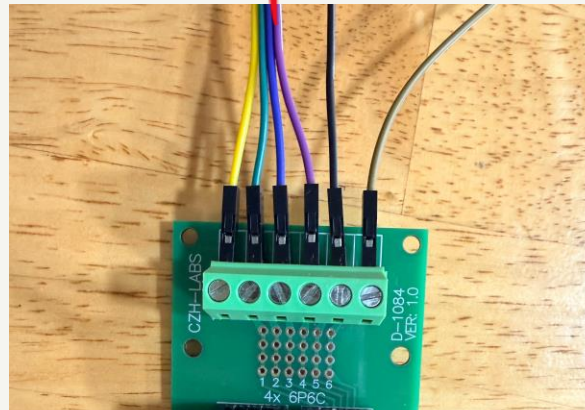
The MITM Heck



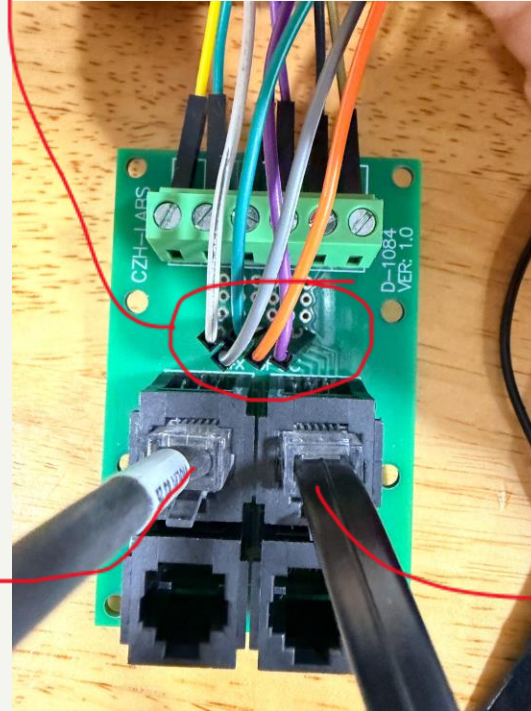
The MITM Heck



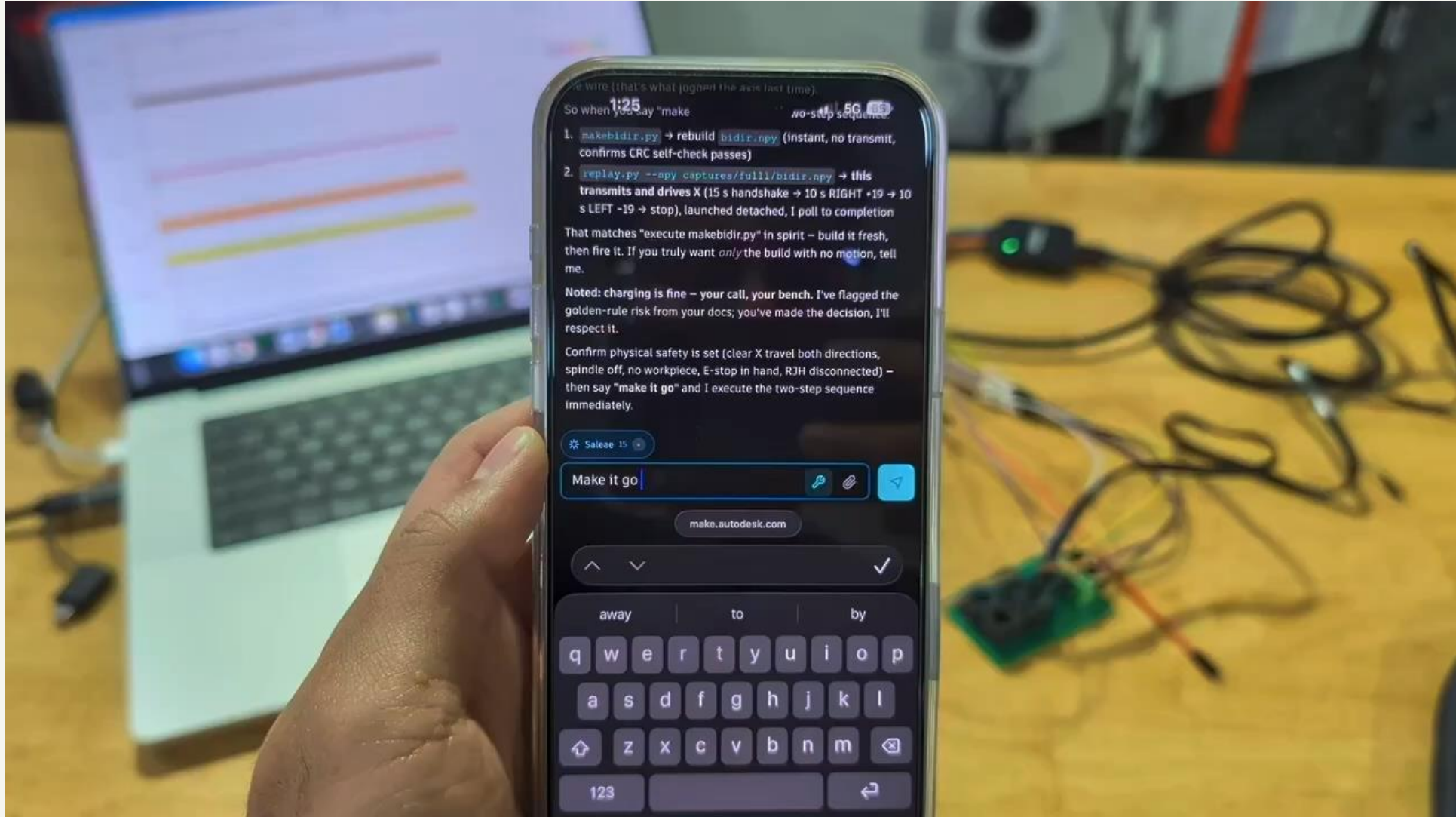
Recorded each button and function on the rjh



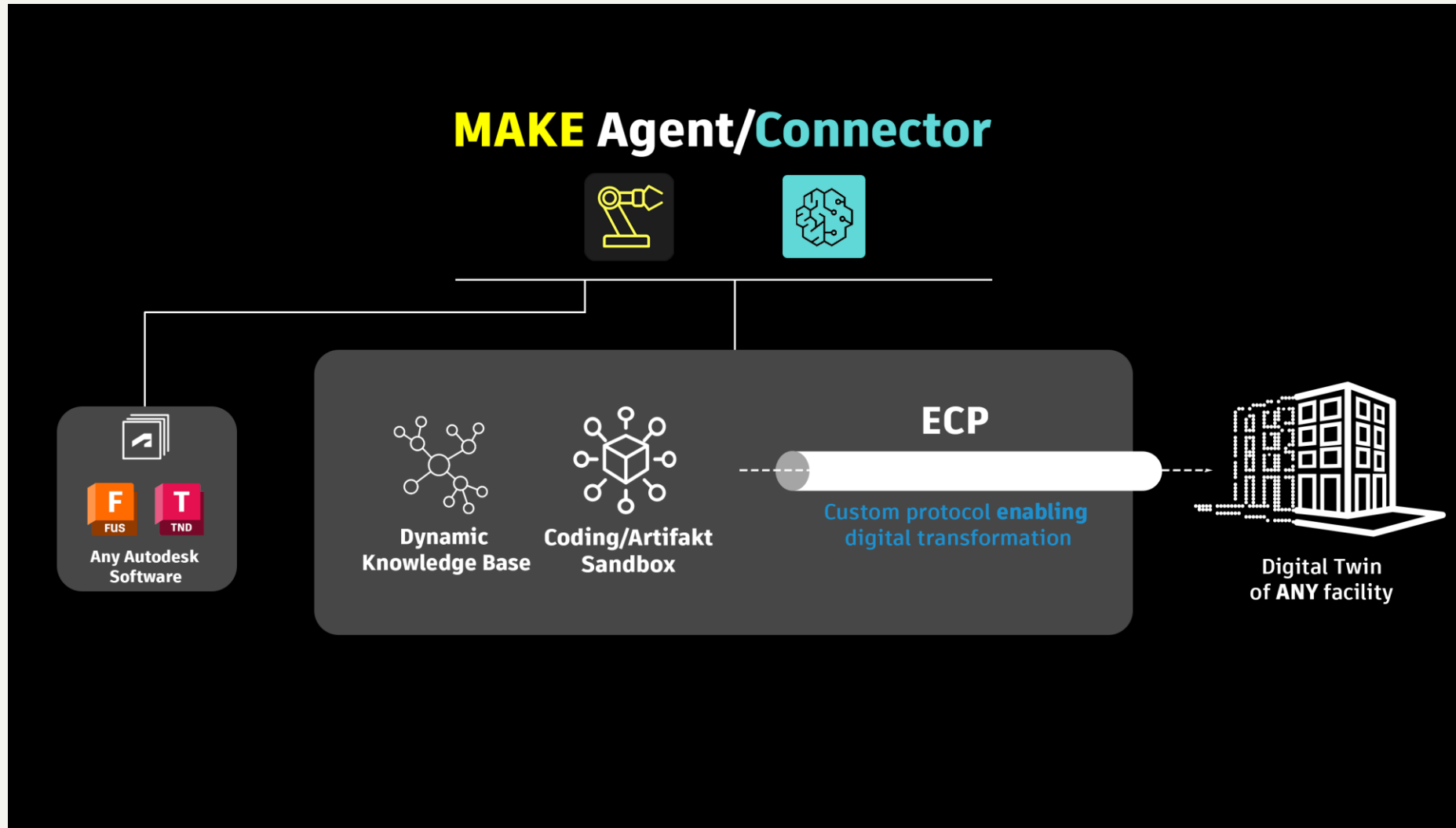
The MITM Heck



The MITM Heck



Secure Global Remote Access? -- ECP

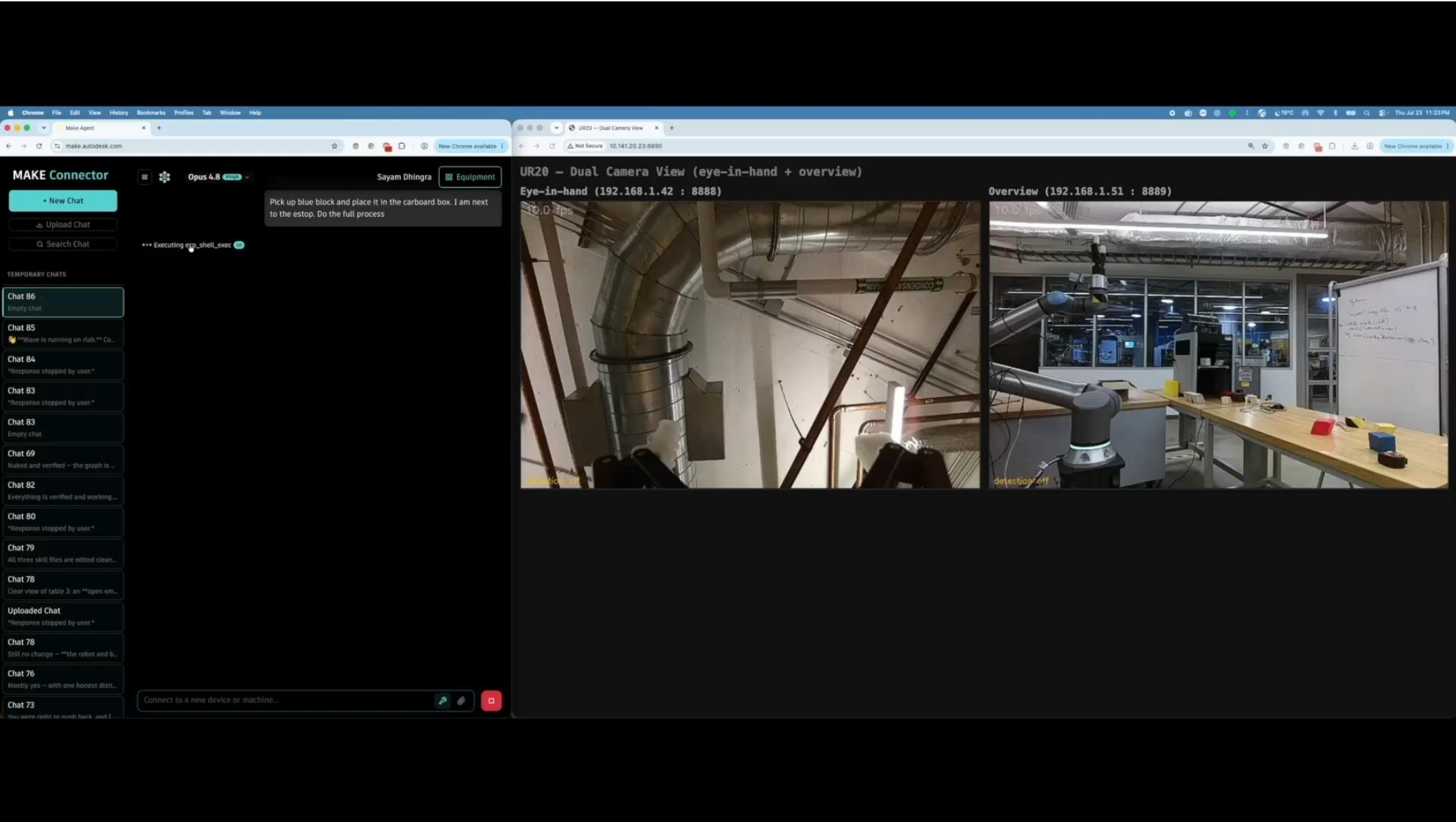


Bonus – Modern CNC (Okuma)



Steve Thompson

Bonus – Robot Arm (UR20)



RJH - Limitations



What else can we do?



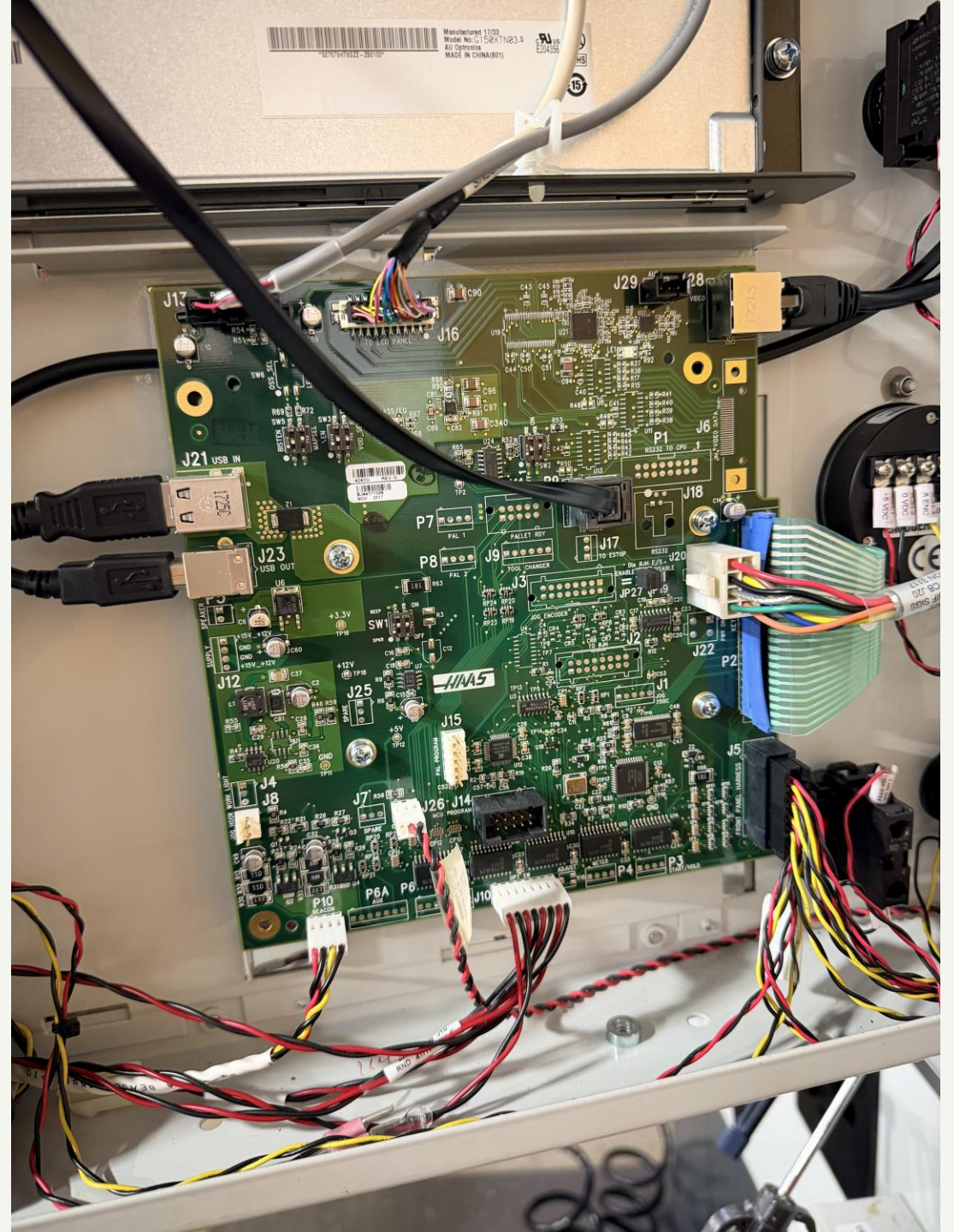
What else can we do?



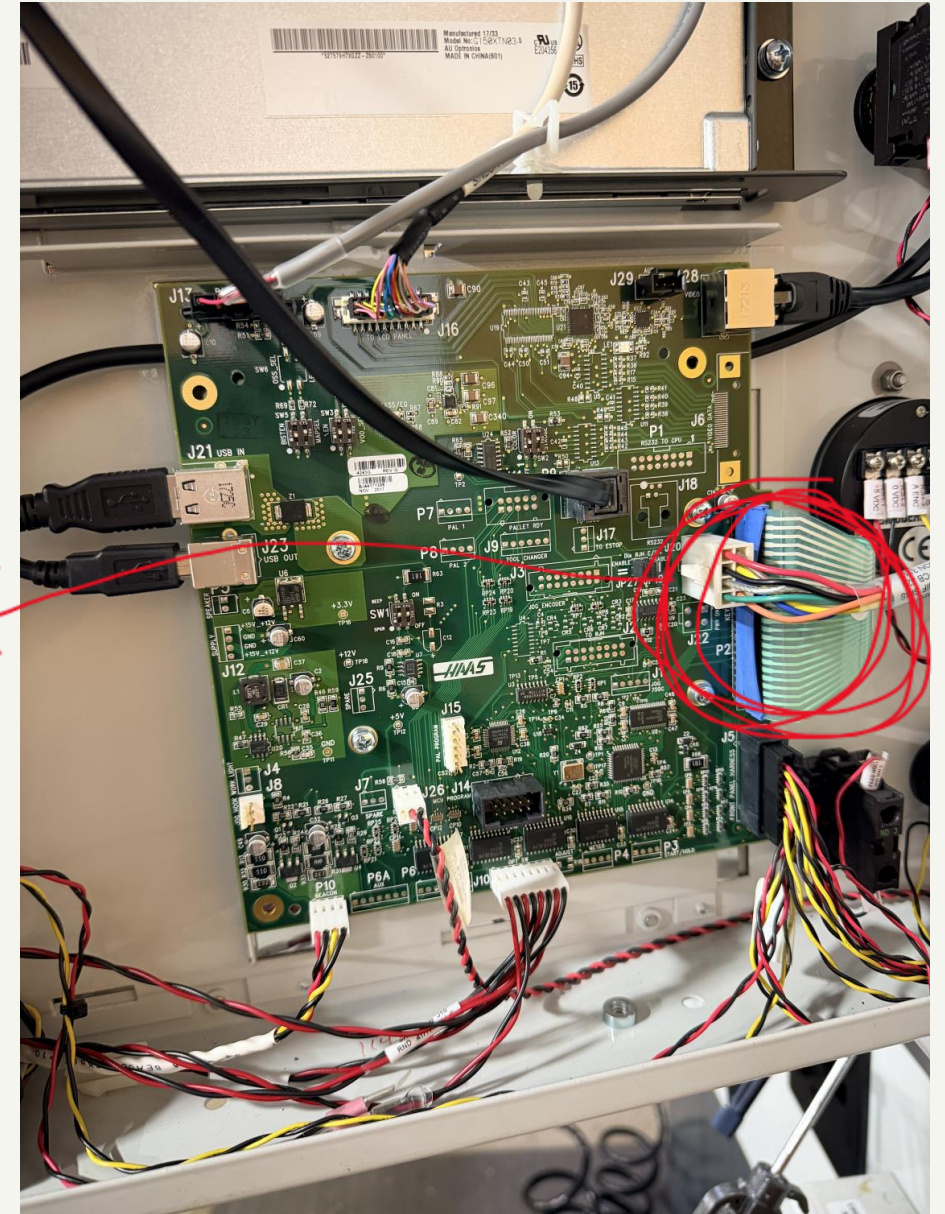
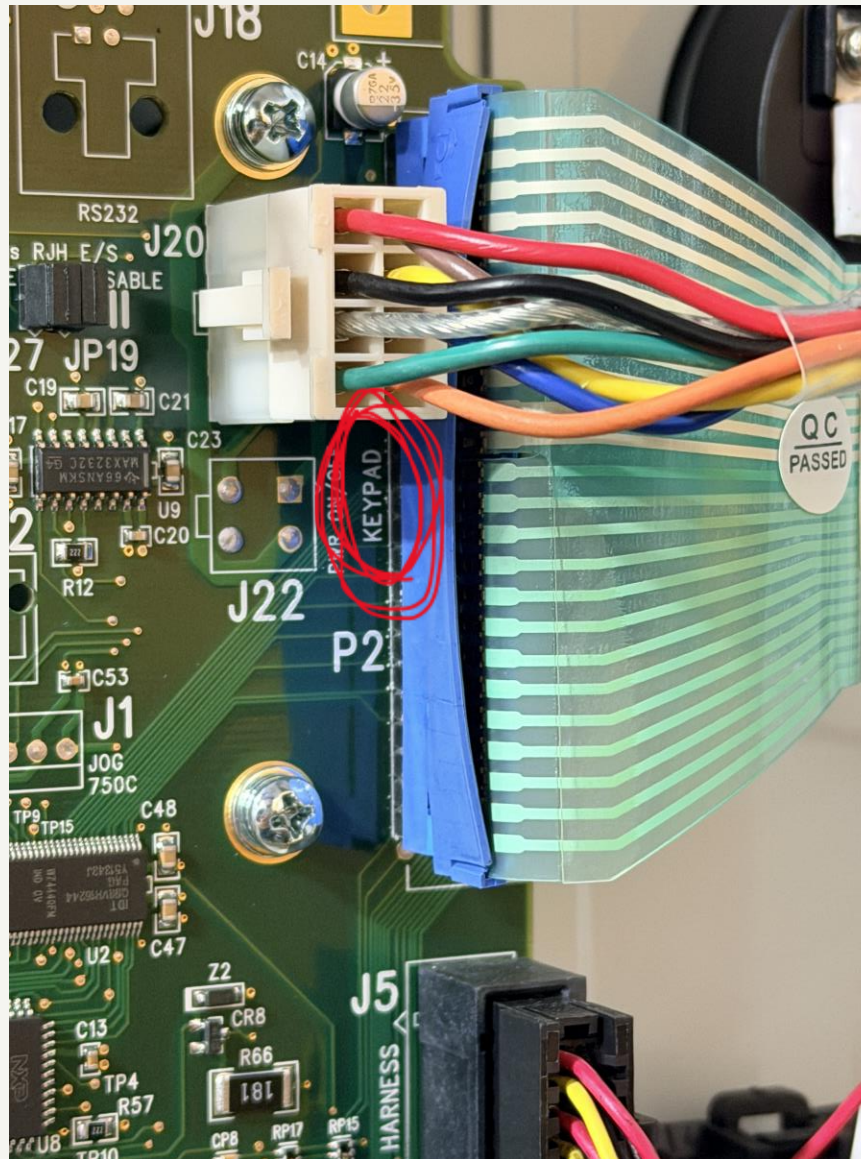
What else can we do?



Hint



The Hack



Hardware Intercept MITM

Keypad ----- Controller

|
|

Our Intercept



Hardware Intercept MITM

--Success



Hardware Intercept MITM

--Success



Next



Next





Autodesk and the Autodesk logo are registered trademarks or trademarks of Autodesk, Inc., and/or its subsidiaries and/or affiliates in the USA and/or other countries. All other brand names, product names, or trademarks belong to their respective holders. Autodesk reserves the right to alter product and services offerings, and specifications and pricing at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document. © 2026 Autodesk. All rights reserved.

ECP – Evil Chihuahua Protocol

