Federal Communications Commission Application For Existing FORM 442

STA File # = *0680-EX-CN-2024*

By

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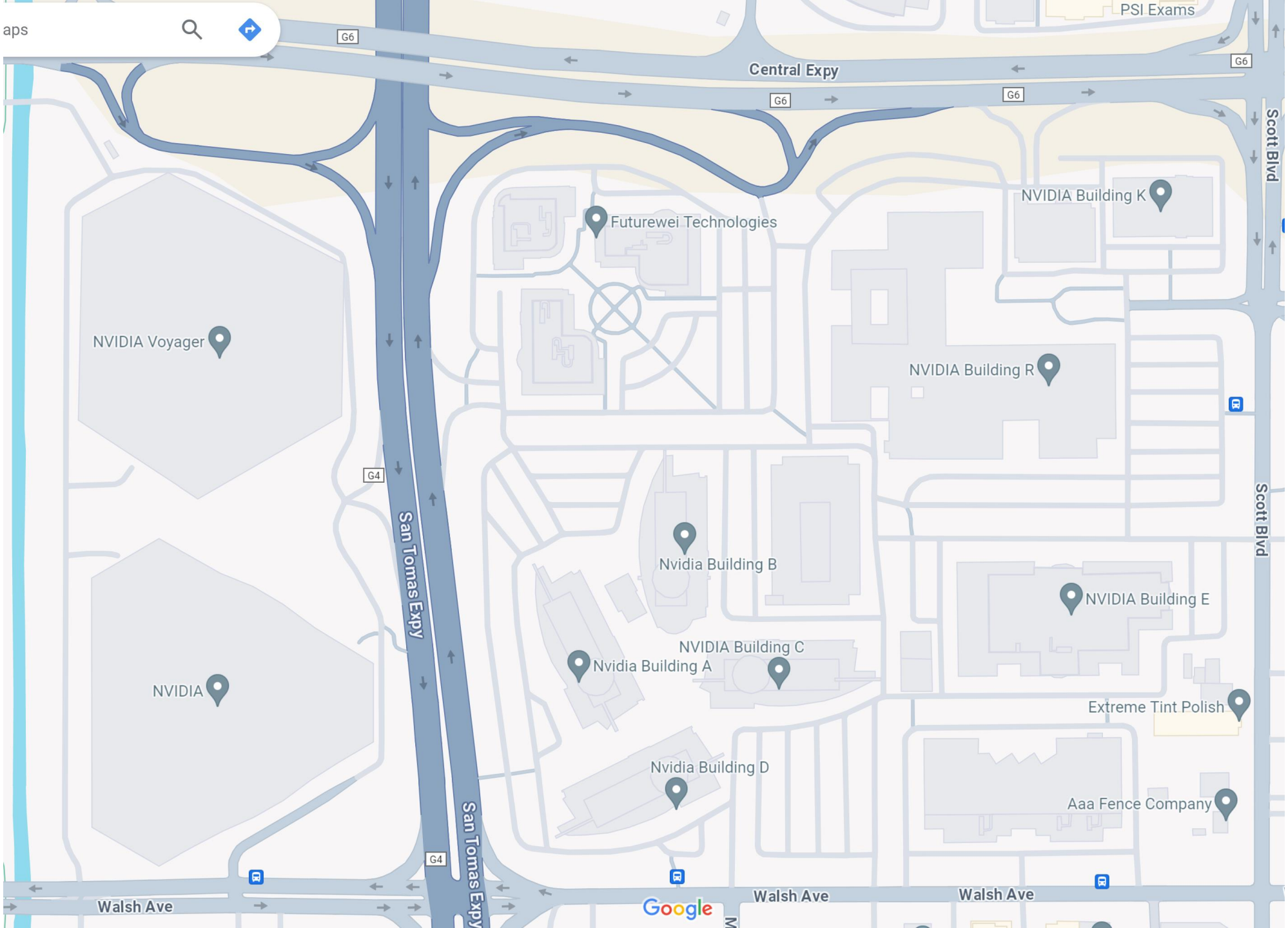
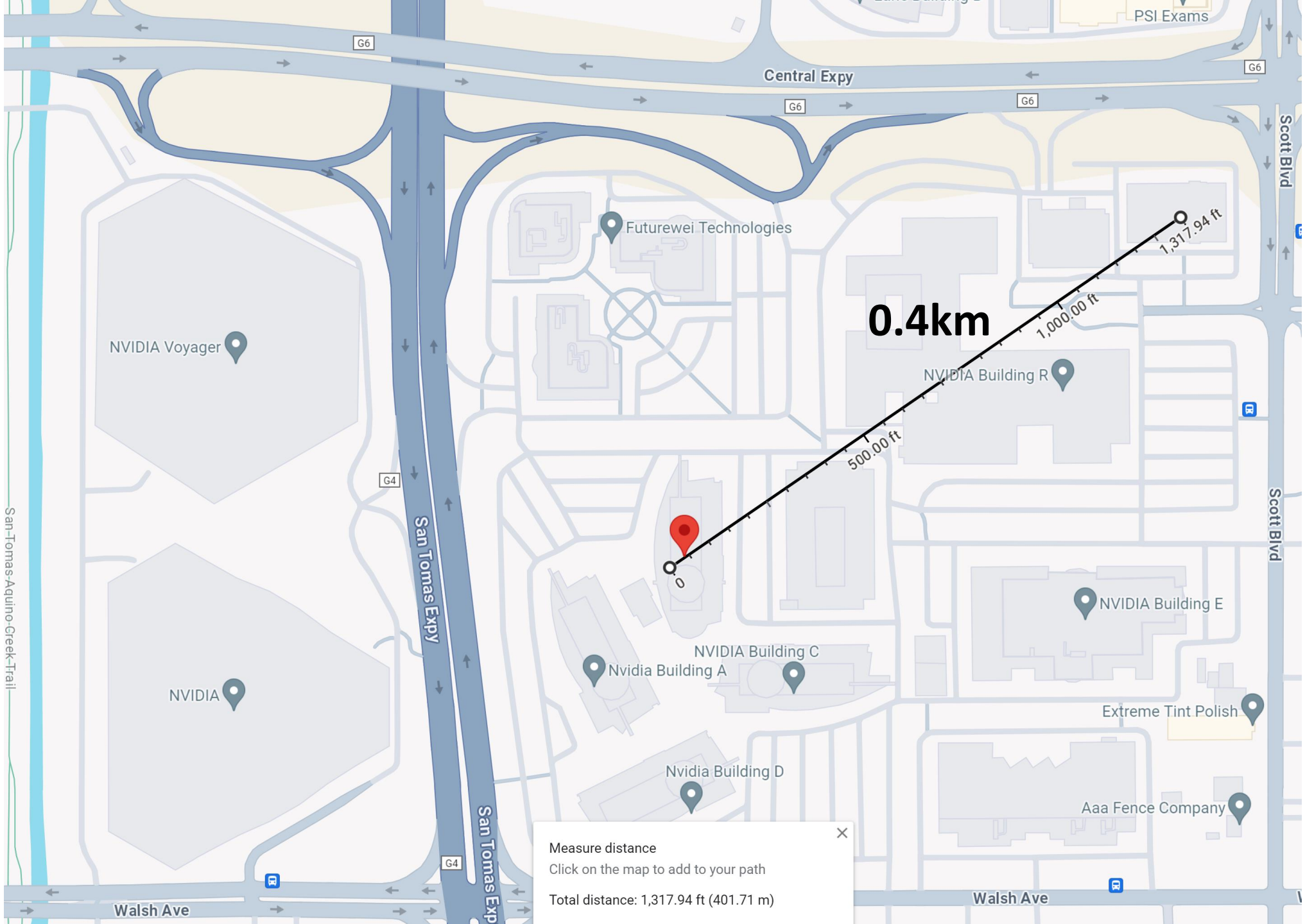
FCC Attachment

- We would like to apply for a license (4.8GHz to 4.9GHz) on our NVIDIA campus.
- We have provided a map in the following pages.
- Building B is the assumed center with a radius of approximately 0.4km.


aps
G6
Central Expy
G6
G6
G6
PSI Exams
Scott Blvd
NVIDIA Building K
Futurewei Technologies
NVIDIA Voyager
NVIDIA Building R
G4
San Tomas Expy
Nvidia Building B
Scott Blvd
NVIDIA Building E
NVIDIA Building C
Nvidia Building A
NVIDIA
Extreme Tint Polish
Nvidia Building D
Aaa Fence Company
G4
San Tomas Expy
Walsh Ave
Google
Walsh Ave
Walsh Ave


0.4km
0
500.00 ft
1,000.00 ft
1,317.94 ft
Measure distance
Click on the map to add to your path
Total distance: 1,317.94 ft (401.71 m)
Central Expy
G6
G4
Scott Blvd
San Tomas Expy
San Tomas Expy
San-Tomas-Aquino-Creek-Trail
Walsh Ave
Walsh Ave
Futurewei Technologies
NVIDIA Voyager
NVIDIA
NVIDIA Building R
NVIDIA Building E
NVIDIA Building C
Nvidia Building A
Nvidia Building D
Extreme Tint Polish
Aaa Fence Company
PSI Exams

Question 6 Exhibit

- Is this authorization to be used for providing communications essential to a research project? (The radio communication is not the objective of the research project)? "YES"
  a. A description of the nature of the research project being conducted.
  b. A showing that the communications facilities requested are necessary for the research project.
  c. A showing that existing communications facilities are inadequete.

Question 6a Exhibit

- **a. A description of the nature of the research project being conducted.**
  - We are expanding our 5G Stand Alone (SA) End-to-End system by adding over-the-air (OTA) capability.
  - This indoor & output, Private 5G system will be used to test the interoperability of NVIDIAs 5G solutions with O-RAN compliant vendors (for example radio unit). The system will include a 5G Core Network, 5G gNB, 5G Radio Unit (O-RU) and 5G SA capable devices (for example smart phone).
  - The OTA TDD connection, between the radio unit & devices, will be operating over the 4.8GHz to 4.9GHz frequency band. We are utilizing an occupied BW = 100MHz.

Question 6b Exhibit

- **b. A showing that the communications facilities requested are necessary for the research project.**
  - We are creating a 5G Stand Alone (SA) End-to-End system which involves integration of the Core Network, gNB and Radio Unit (O-RU).
  - This will allow NVIDIA to evaluate the functional operation of its 5G solutions which consists of physical layer (L1) signal processing, O-RAN front haul interface and interoperability with 3rd party O-RU equipment.
  - Without the Radio Communication, we will not be able to have the base station (gNB) communicate with the UEs (Smart phone) in our indoor lab.
  - With the Radio Unit integrated, we can conduct OTA testing with commercially available 5G SA devices in the 4.8GHz to 4.9GHz frequency band. The OTA testing will be indoors with the Radio Unit connected indoors and the mobile devices operating at lab bench level.

Question 6c Exhibit

- **c. A showing that existing communications facilities are inadequate.**
  - We don’t have a license to transmit Over The Air in the frequency band we are requesting a license for indoors & outdoors use.
  - Without this license we cannot perform testing.