JACOBS TECHNOLOGY INC.
EXPERIMENTAL STA APPLICATION
FILE NO. 1037-EX-ST-2023

EXHIBIT 1 – REQUEST FOR EXPERIMENTAL STA

Jacobs Technology Inc. ("Jacobs") hereby requests experimental Special Temporary Authority ("STA") to conduct **indoor** experimental antenna testing utilizing select X band frequencies in the 8-9 GHz, 9.2-10.6 GHz, & 10.7-12 GHz range. As noted, testing would occur **indoors** at the Jacobs facility located at 7765 Old Telegraph Road, Severn, Maryland 21114. Further testing details and layout documentation is contained herein.

Jacobs acknowledges that all experimental operations conducted in the requested frequency bands will be on a non-interference basis. Owing to the indoor nature of the testing coupled with utilization of a pulsed waveform, Jacobs believes that no interference issues will arise from the testing. However, to the extent necessary, Jacobs will utilize its best efforts to avoid and mitigate any potential external interference.

For Commission reference Jacobs notes that it has previously held FCC experimental authorization utilizing the select X band frequencies for outdoor testing at this facility under Call Sign WL2XLT (File No. 0784-EX-CN-2020).

The **stop buzzer contacts** for this project are Wes Cox, Mobile #443-745-5924, e-mail Westley.Cox@Jacobs.com and Travis Cochran, Mobile #757-409-0856, e-mail Travis.Cochran@Jacobs.com

Indoor Experimental Testing Details/Layout

Request for Special Temporary Authority to Radiate Indoor X-band Antenna Testing

10 May 2023

Contact: Jerry Davieau
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Background

- On behalf of a DoD customer, Jacobs wishes to temporarily operate an indoor X-band antenna test range.
- The testing to be performed would be peak power and antenna pattern measurements on X-band AESA tiles and panels.
- Test operations would be conducted at Jacob's Severn Maryland facility located at 7765 Old Telegraph Road.
- The facility to be used is one with a metal corrugated roof, with brick covered cinder block sidewalls.
- Jacobs has previously operated an outdoor X-band radar in the vicinity of the proposed test range under experimental file number 0784-EX-CN-2020.
- The time period requested for the STA is from 20 June 2023 to 17 Dec 2023.

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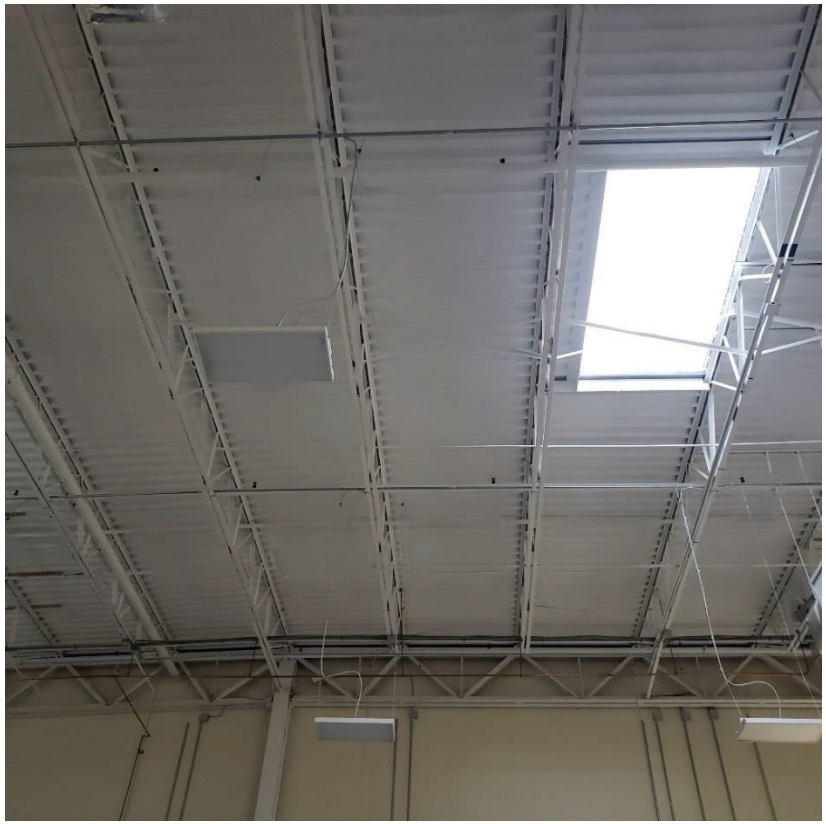
Proposed Test Range Location

- The proposed test operations would be conducted inside 7765 Old Telegraph Road, Severn MD.

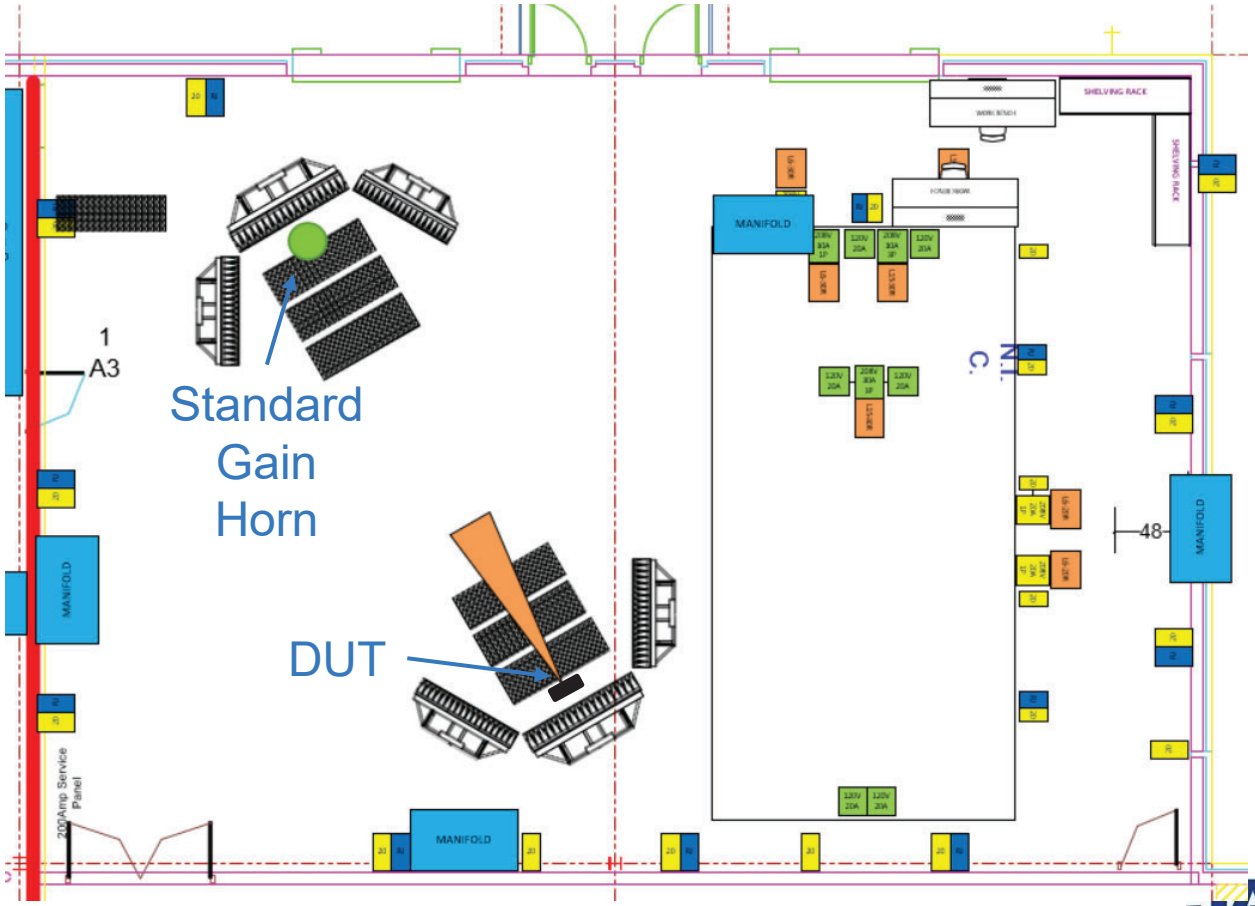
Proposed Test Range Building Construction

- The exterior walls of the building are cinder block covered with brick.
- The roof is corrugated metal with two skylights that will be covered with RF shielding during testing.



Test Range Interior Layout

- The transmitter and receiver can be moved to different orientations within the space shown
- The Device Under Test (DUT) will either transmit to the horn, or receive from the horn



Testing Parameters

Test mode 1, Low power beam pattern testing	
Frequency range, GHz	7.5-12, notching 9-9.2
Modulation	Single tone sweep from network analyzer
Hours operating per week maximum	30
Transmit duty cycle	Up to 100%
Maximum EIRP with test horn as transmitter, dbmi	-20
Transmit horn steering	Fixed, boresighted on target
Maximum EIRP with AESA tile as transmitter, dbmi	19 dbmi
AESA beam steering	Scanned to facilitate beam pattern measurements
Test mode 2, high power testing	
Frequency range, GHz	8.5-10.5, notching 9-9.2
Modulation	Linear FM chirps
Chirp bandwidth	50 khz to 500 MHz
Hours operating per week maximum	2
Transmitter peak EIRP, dbmi	86.6
Maximum transmitter duty cycle, %	20
Transmitter steering	Fixed, boresight on target only

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Stop Buzzer Contact Information

- Transmit operations can be suspended immediately at any time by contacting any of the following personnel:

Name	Cell	Email
Wes Cox	443-745-5924	Westley.Cox@Jacobs.com
Travis Cochran	757-409-0856	Travis.Cochran@Jacobs.com

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Summary of Proposed STA Request

- Jacobs proposes to operate an X-band indoor antenna test range from 20 June 2023 to 17 Dec 2023.
- Transmitter operations will be conducted within the Jacobs facility at 7765 Old Telegraph Road, Severn Maryland.
- Transmit operations will be limited to the parameters shown on slide 6.
- Jacobs has previously operated an outdoor X-band radar in the vicinity of the proposed test range under experimental file number 0784-EX-CN-2020.