



Teaming Information Form

Endless Generative Waveforms (End-Gen) Research Program

Thank you for your interest in the End-Gen program and for your interest in sharing information about your capabilities with potential teaming partners for a potential future Broad Agency Announcement (BAA). To share your information, please complete the form below.

Point of Contact Information

Please complete the fields below with the information you would like to share with potential teaming partners.

Last Name: Venkatesh
First Name: Suresh
Title: Assistant Professor
Email: suresh.venkatesh@ncsu.edu
Phone Number: 814-409-8323
Organization: North Carolina State University
Organization Website: <https://research.ece.ncsu.edu/sureshv/>



Areas of Expertise

Please choose one or more of the dropdown fields on the form below that best describes the expertise of your organization. If the keywords listed do not fully describe your organizational expertise, please add keyword(s) in the field labelled “Other keyword(s).”

- | | | |
|-------------|-------------------------|--------------------------|
| Keyword #1: | Communications | <input type="checkbox"/> |
| Keyword #2: | Software Defined Radios | <input type="checkbox"/> |
| Keyword #3: | Systems Integration | <input type="checkbox"/> |
| Keyword #4: | Modeling and Simulation | <input type="checkbox"/> |
| Keyword #5: | Propagation | <input type="checkbox"/> |

Other Keyword(s):

Complimentary Expertise Sought

Please choose one or more of the dropdown fields on the form below that best describes the expertise sought by your organization from a potential future teaming partner. If the keywords listed do not fully describe the expertise you seek, please add keyword(s) in the field labelled “Other Keywords.”

- | | | |
|-------------|-------------------------|--------------------------|
| Keyword #1: | Artificial Intelligence | <input type="checkbox"/> |
| Keyword #2: | Machine learning | <input type="checkbox"/> |
| Keyword #3: | Networking | <input type="checkbox"/> |
| Keyword #4: | Software Integration | <input type="checkbox"/> |
| Keyword #5: | Deep learning | <input type="checkbox"/> |

Other Keywords:



Capabilities Summaries

As an option to facilitate teaming, potential proposers may submit a Capabilities Statement, 5 pages maximum, in addition to this form for possible posting on our website at <https://www.iarpa.gov/index.php/research-programs/END-GEN>. IARPA will attempt to post this teaming information in a timely manner upon receipt. Such posting will be taken down at or around the time the BAA closes. This information will not be reviewed or considered by the government for any purpose other than review for appropriate content.

Certification for release on the IARPA website

By my signature below, I certify that the information I am submitting to IARPA is not proprietary. I agree that IARPA may post the information provided on this form as well as my capabilities summary (if supplied) to the End-Gen website.

Your Name: Suresh Venkatesh

Your Signature: *Suresh Venkatesh*

Date: 02/03/2025

Please email a copy of this completed form and your capabilities statement to: dni-iarpa-end-gen-proposersday@iarpa.gov

Capabilities at North Carolina State University Prof. Suresh Venkatesh

Prof. Suresh Venkatesh has expertise in software-defined radios, integrated circuits/systems, space-time modulated apertures, computational imaging, phased arrays, and metasurfaces. He received his PhD from the Univ. of Utah in 2017 and then was a postdoctoral researcher at Princeton from 2018-2022. He was also a lead antenna technology consultant at E-space where he developed large SATCOM phased-array platforms from 2020-2022. He joined the NC State ECE department in Jan. 2023.

Further details can be found here: <https://research.ece.ncsu.edu/sureshv/>

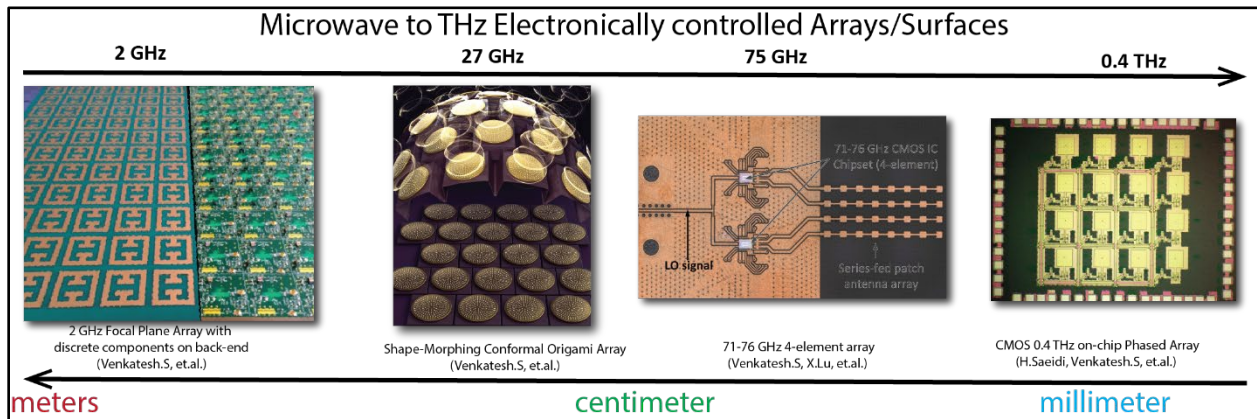


Figure 1: Capabilities include design and development of custom software defined apertures/arrays across the electromagnetic spectrum.

RF System Prototyping and Measurement Facility:

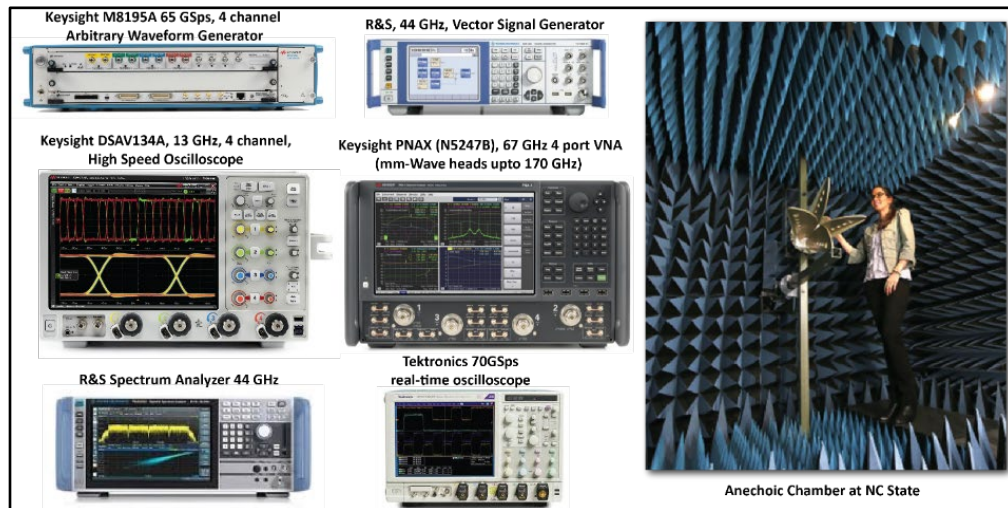


Figure 2: Illustration of some of the test-equipment at NC State

Prof. Venkatesh is part of the Electronic Circuits and Systems group at NC State and has access to MRC Electrical Characterization shared facilities which include instrumentations like arbitrary waveform generator (4 channel 65 GSps), signal generators at (20 GHz, 44 GHz, 67 GHz), spectrum analyzer (44 GHz), high speed oscilloscope (4 channel 13 GHz), vector network analysis

up to 140 GHz, Erickson Power Meter (calorimeter-style 75 GHz – 3 THz), and probe stations (with necessary DC and RF probes up to 110 GHz). NC State also hosts an anechoic chamber facility with the MRC Electrical Characterization shared facilities. These facilities will be effectively utilized to build and characterize associated integrated circuits and devices.

Software and CAD Facility: NC State has extensive software infrastructure to complete this project, including Cadence, SpectreRF, EMX, Sonnet, CST, ADS, HFSS, FEKO, COMSOL, and Matlab. ICs will be fabricated using Global Foundry 45RFSOI technology, and we have all the necessary design kits. The software infrastructure is managed by a team of IT support staff.

Computing Facility: NC State University Office of Information Technology provides High Performance Computing (HPC) services available to all NC State faculty members. The primary computational resource is a Linux cluster with approximately 500 nodes and approximately 13,000 cores. There are several specialized compute-nodes with GPUs or large memory (up to 1024 GB). These facilities will be effectively utilized to generate digital twin models, algorithms, design/simulation of electronic circuits and systems.