### SIMON everett an analytic design firm

### South Carolina Cyber Ecosystem Coordination Initiative

prepared for SCITDA // 6 Mar 2023

### how we got here

#### SOUTH CAROLINA CYBERSECURITY ECOSYSTEM STUDY

- Developed for: the South Carolina Office of the Governor the South Carolina Department of Commerce and the University of South Carolina
- simon everett an analytic design firm

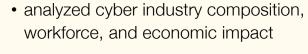
- analyzed cyber industry composition, workforce, and economic impact
- evaluated ten pillars of cyber ecosystem (e.g., education, investment, posture & readiness)
- catalogued and characterized enabling assets
- performed comparative assessment against five other states

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Office of the Govern ve Order No. 2022-27

WHEREAS, the State of South Carolina has significant interests in maintaining a enhancing the State's cybersecurity ecosystem and cyber-related economic sector, and

WHEREAS, on April 19, 2017, the undersigned issued Executive Order No. 2017-06 estabilishing the South Carolian Cariciaa Infrastructure Cyberescutivy (SC CIC)" Executiv Oversight Group to develop, execute, and implement a comprehensive program and operations efforts to evaluate, enhance, and protect the State's circlia infrastructure and key resources and a protect the same from sophisticated cyber threats, incidents, or attacks so as to preserve the health aftery, and well-being of South Carolina's circlizera and housinesser, and

WHEREAS, in addition to protecting critical infrastructure and key resources from ophinizated systemetratism and critical particular systemetry and the simultaneously explore broader opportunities to develop and attempting the fast intervide cyloterrecurity consystem by actions to prioritize additional workforce development in this critical stores, and identifying, encouraging, and incentivizing new cyber-related investment in South Carolina; and

WHEREAS, in recognition of the aforementioned considerations and opportunities, the underigned identified a need for additional collaboration among key stakeholders and the development and implementation of a statewide effort to coordinate the various cyber-related interests, plans, and approaches so as its improve shared situational awareness, increase resource efficiency, and promote unity of effort; and

WHEREAS, the undersigned recently engaged with the South Carolina Department of Commerce ("Department of Commerce") and the University of South Carolina to commission a preliminary assessment of South Carolina's cybersecurity ecosystem, titled the South Carolina Cybersecurity Ecosystem Study; and

- formalized statewide initiative to improve coordination and collaboration across all sectors and enhance the state's competitive standing
- directed SC Commerce to develop a comprehensive strategic plan for improved public awareness, resource provision, and unity/efficiency of effort

### overarching goals

# align

ecosystem organizations to ensure resources and initiatives are optimized

augment

state and regional capacity to create a secure and vibrant cyberspace for residents, business, and the public sector

attract

investors, executives, and professionals to catalyze economic growth and develop a world-class workforce

# study overview // approach

### OUTREACH

- in-depth discussions with SC stakeholders in each pillar
- 75+ individuals

#### RESEARCH

- SC ecosystem orgs, initiatives, data
- ecosystem posture in other SE region states

#### SURVEY

- perspectives, insights from 225+ stakeholders
- data on cyber companies, workforce



# industry overview // company composition

# 324 relevant\* companies

# **47** pure-play (15%) **277** diversified (85%)

\*operates within one of 15 cyber-relevant NAICS codes: located in SC and/or performs on an SC-based contract

list compiled from data provided by SC Competes (97), survey responses (40), and stakeholders (21), as well as research on LinkedIn (92) and USAspending.gov (75)

- includes many computer repair shops that happen to offer a cybersecurity service
- heavily reliant on NIWC-driven DoD contracting industry in Charleston (more than 40% of SC cyber companies are in CHS)
- only 8 of the state's pure-play firms appear to employ 10 or more cybersecurity professionals

SC needs more growing, pure-play companies in order to create a vibrant cybersecurity ecosystem and drive growth across the pillars

# industry overview // cybersecurity professionals

# **2,695** (48%)

(4%)

214

### at pure-play cyber companies

### at diversified cyber companies

at *non-cyber* companies/orgs

incl. military, healthcare, education, CI, etc.

# 2,660 (48%)

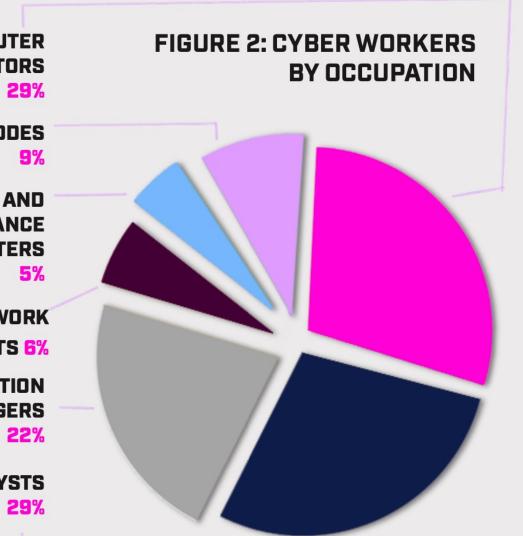
#### total 5,569 total cybersecurity professionals in SC

- considers workers in 13 standard
   occupational classification (SOC) codes
- 12 of those SOCs are included at weights of 30% and below
- only 1 SOC (15-1122, Information Security Analyst) is included at 100% (see next slide)

SC's cyber industry is largely embedded within other industries rather than having its own prominence challenging growth across the pillars and SC's ability to play a leading role within the region

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### Industry overview // SC workforce breakdown



NETWORK AND COMPUTER SYSTEMS ADMINISTRATORS 29%

ALL OTHER SOC CODES
9%

SOFTWARE DEVELOPERS AND SOFTWARE QUALITY ASSURANCE ANALYSTS AND TESTERS 5%

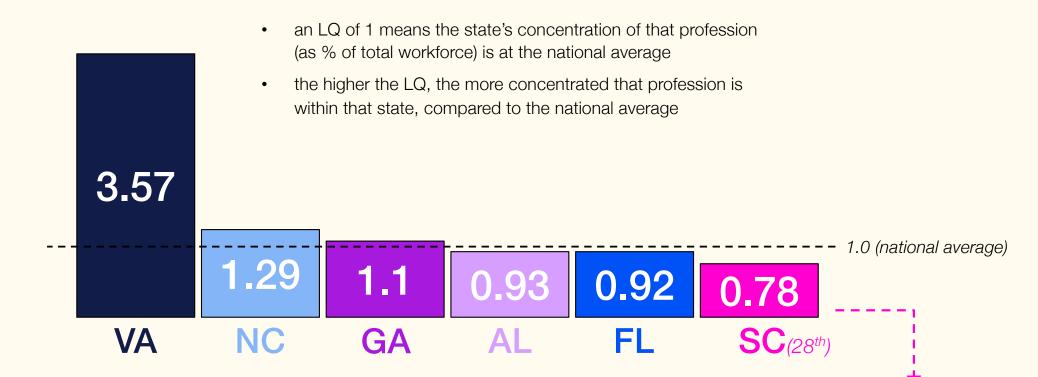
> COMPUTER NETWORK ARCHITECHTS 6%

COMPUTER AND INFORMATION SYSTEMS MANAGERS 22%

INFORMATION SECURITY ANALYSTS
29%

### industry overview // cyber worker location quotient

the location quotient (LQ) for a SOC shows us the concentration of that profession within a state, relative to the national average

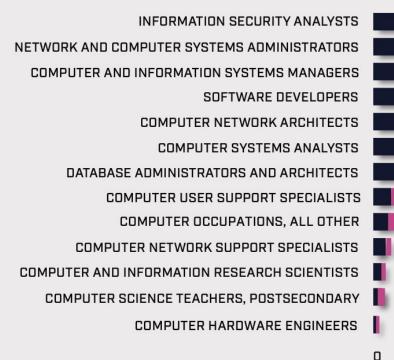


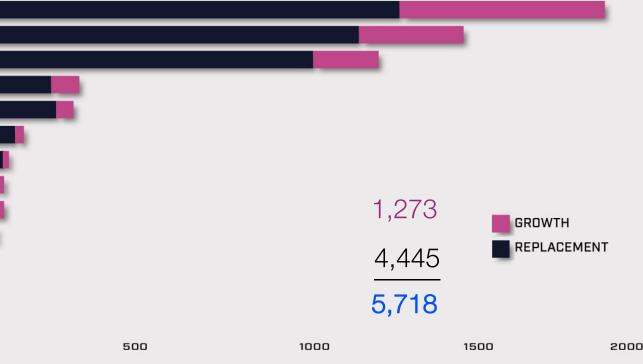
in a region rich with DoD assets that drive the cybersecurity industry, SC faces an uphill battle

## SC cyber worker 10-year demand

### FIGURE 5: 10-YEAR DEMAND FOR CYBERSECURITY WORKERS

#### OCCUPATION





#### 10 YEAR LABOR DEMAND

### SC cyber worker wages

### FIGURE 3: ANNUAL MEDIAN WAGES FOR CYBERSECURITY-RELATED OCCUPATIONS

OCCUPATION

SOUTH CAROLINA, ALL OCCUPATIONS

\$36,100

#### ANNUAL MEDIAN WAGE (2020 USD)

### SC cyber worker wages

### FIGURE 3: ANNUAL MEDIAN WAGES FOR CYBERSECURITY-RELATED OCCUPATIONS

#### \$122.900 \$106,700 \$103,900 \$96,300 \$95,400 \$84,900 \$84,500 \$83,600 \$75,800 \$75,800 \$58,100 \$36,100

ANNUAL MEDIAN WAGE (2020 USD)

#### OCCUPATION

COMPUTER AND INFORMATION SYSTEMS MANAGERS COMPUTER AND INFORMATION RESEARCH SCIENTISTS COMPUTER HARDWARE ENGINEERS COMPUTER NETWORK ARCHITECTS COMPUTER OCCUPATIONS, ALL OTHER INFORMATION SECURITY ANALYSTS SOFTWARE DEVELOPERS DATABASE ADMINISTRATORS AND ARCHITECTS COMPUTER SYSTEMS ANALYSTS NETWORK AND COMPUTER SYSTEMS ADMINISTRATORS COMPUTER SCIENCE TEACHERS, POSTSECONDARY COMPUTER NETWORK SUPPORT SPECIALISTS COMPUTER USER SUPPORT SPECIALISTS

# SC cyber worker unemployment

### FIGURE 4: UNEMPLOYMENT RATES FOR CYBERSECURITY-RELATED OCCUPATIONS

OCCUPATION

SOUTH CAROLINA, ALL OCCUPATIONS

**UNEMPLOYMENT RATE** 



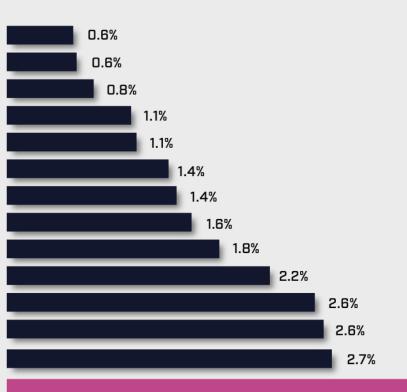
5.1%

### SC cyber worker unemployment

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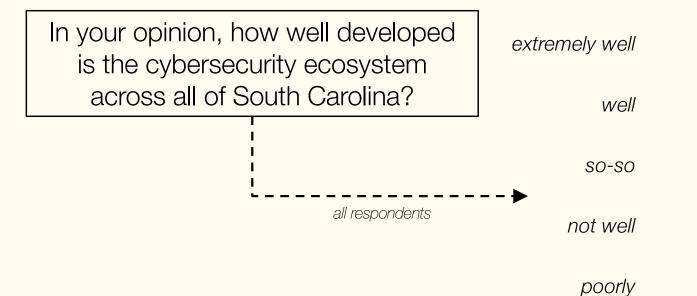
#### OCCUPATION

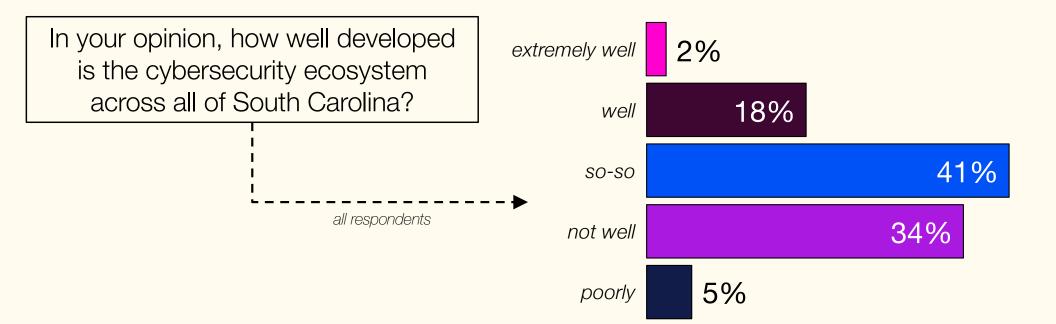
COMPUTER NETWORK ARCHITECTS INFORMATION SECURITY ANALYSTS DATABASE ADMINISTRATORS AND ARCHITECTS COMPUTER HARDWARE ENGINEERS NETWORK AND COMPUTER SYSTEMS ADMINISTRATORS COMPUTER SYSTEMS ANALYSTS COMPUTER AND INFORMATION SYSTEMS MANAGERS SOFTWARE DEVELOPERS COMPUTER AND INFORMATION RESEARCH SCIENTISTS COMPUTER SCIENCE TEACHERS, POSTSECONDARY COMPUTER NETWORK SUPPORT SPECIALISTS COMPUTER OCCUPATIONS, ALL OTHER SOUTH CAROLINA, ALL OCCUPATIONS

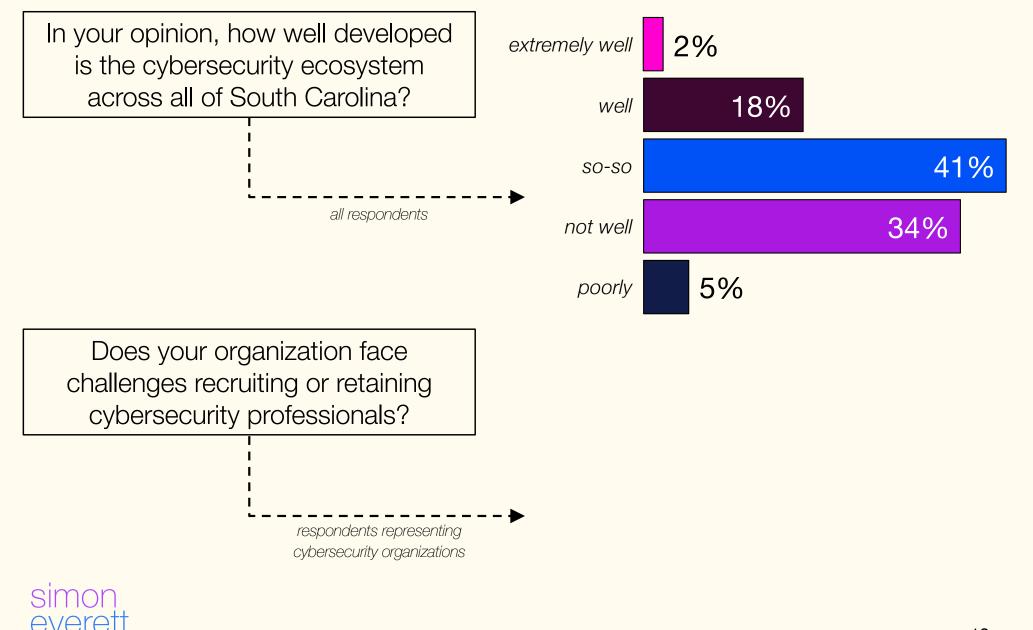


5.1%

#### **UNEMPLOYMENT RATE**









How important are the following factors when hiring for cybersecurity positions in your organization?

factors listed according to their average rank of importance out of 20 total factors

the ten factors not shown here are all additional technical certifications

factor rank



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rank	factor
1	high school diploma
2	work experience
3	two-year undergraduate degree
4	four-year undergraduate degree



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4	four-year undergraduate degree
5	Security+
6	Network+
7	CISSP



How important are the following factors when hiring for cybersecurity positions in your organization?

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the ten factors not shown here are all additional technical certifications

rank factor high school diploma 2 work experience 3 two-year undergraduate degree 4 four-year undergraduate degree 5 Security+ 6 Network+ 7 **CISSP** 8 security clearance 15 graduate degree 20 former military experience



If you were attempting to advance a cybersecurityrelated initiative, which individuals would you seek to engage for assistance? (List up to 5.)

names and organizations have been combined where appropriate

only names/organizations receiving 3+ mentions are shown here

mentions	individual / organization



men

If you were attempting to advance a cybersecurityrelated initiative, which individuals would you seek to engage for assistance? (List up to 5.)

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tions	individual / organization
27	SC CIC / SLED
6	The Citadel
5	Governor McMaster
4	UofSC system
4	SC Competes
3	Clemson University
3	SC Commerce
3	SC Admin
3	NIWC



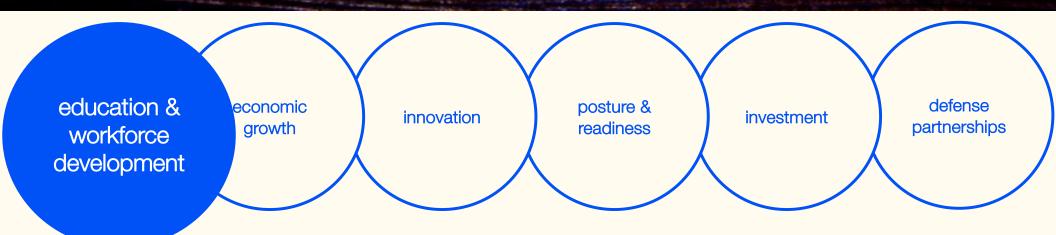
### key challenges

widespread, shared frustration across the broad stakeholder community

- collaboration impeded by territorialism
- all noise and no signal
- lots of activity... little unity of effort
- judging by activity, not results
- no shared vision for the desired end state
- key actors overestimate public awareness
- discussions get too technical too quickly

stakeholders strongly want a forcing function for collaboration and collective growth across this ecosystem

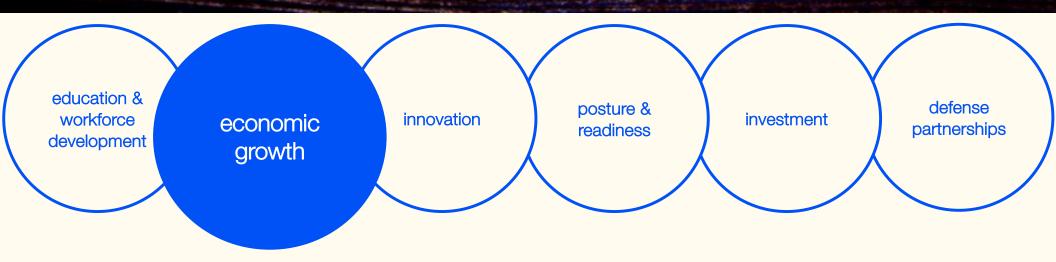




#### SC Department of Employment and Workforce

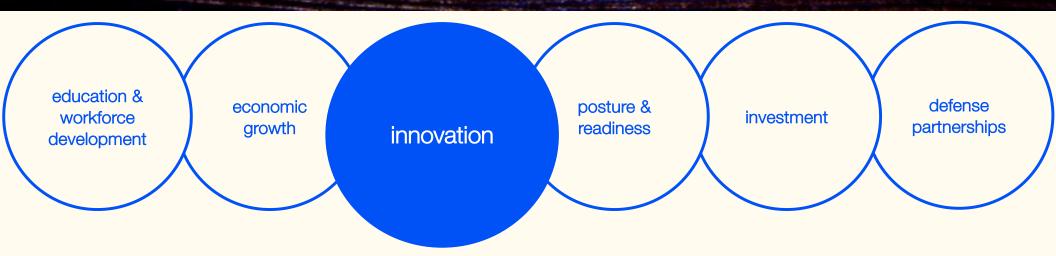
- SC Office of the Governor
- SC Technical College System
- SC Commission on Higher Education
- SC Department of Education
- Clemson University
- The Citadel
- USC Columbia
- SC State University
- USC Aiken
- Technical College of the Lowcountry

- Beaufort County School District
- Anderson School District 5
- Apprenticeship Carolina
- Build Carolina (SC Codes and Develop Carolina
- McLeod Information Systems
- Blackbaud
- Check Point Software Technologies
- Mantech
- ISC<sup>2</sup> Chapter, Charleston
- ISC<sup>2</sup> Chapter, Midlands

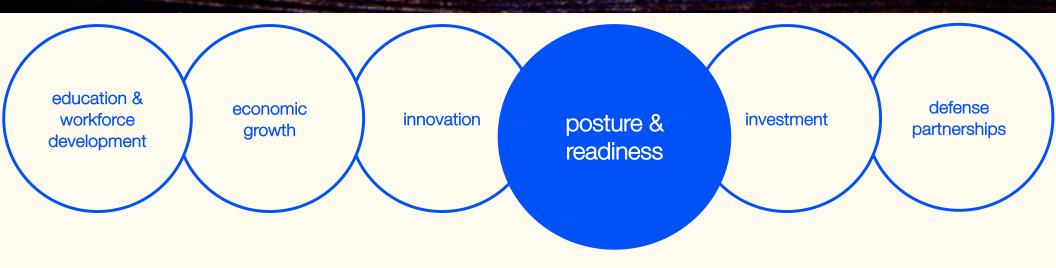


- SC Council on Competitiveness
- SC Department of Commerce
- readySC // South Carolina Technical College System
- WesternSC
- Upstate SC Alliance
- Central SC Alliance
- North Eastern Strategic Alliance
- Charleston Regional Development Alliance

- I-77 Alliance
- Southern Carolina Regional Development Alliance
- The LINK Economic Alliance
- Trident Technical College
- Coastal Carolina University
- SC Economic Developers' Association
- City of North Augusta

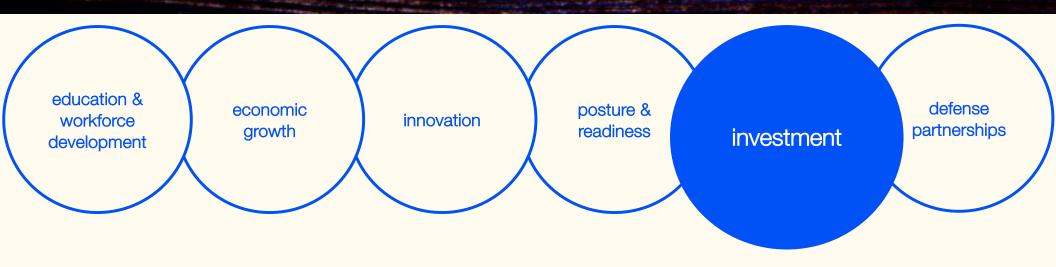


- SC Research Authority
- College of Charleston
- USC Beaufort
- Clemson University
- Savannah River National Laboratory
- SC Fraunhofer USA Alliance (SC Council on Competitiveness)
- Beaufort Digital Corridor
- Momenteum Strategies
- PhishLabs
- HillSouth



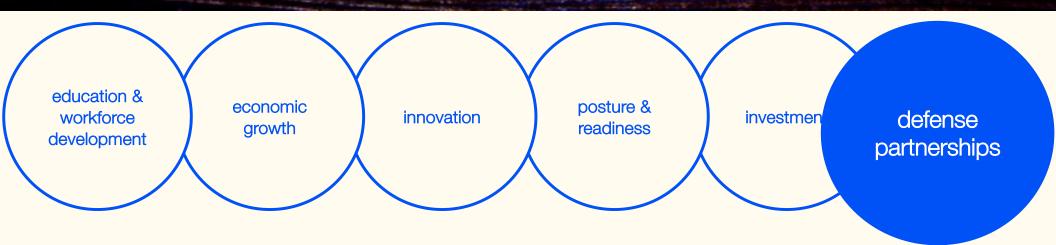
- SC Office of the Governor
- SC Critical Infrastructure Cybersecurity Program // SLED
- SC Department of Administration
- SC Department of Consumer Affairs
- SC Ports Authority
- SC Department of Social Services

- Municipal Association of SC
- SC Association of Counties
- Small Business Development Center
- Capgemini



- Hook Security // Ansuz Capital
- SC Research Authority
- SC Department of Commerce
- USC Columbia, Office of Economic Engagement
- Charleston Digital Corridor
- SC Community Loan Fund

- Business Development Corporation of SC
- Alerion Ventures
- VentureSouth
- Stewart Family Office
- Deal Strategies



- SC Military Base Task Force
- SC National Guard
- NIWC Atlantic
- AFCENT/Shaw AFB
- Cyber Center of Excellence, Fort Gordon
- Aiken Technical College
- The Citadel
- South Coast Cyber Center
- Charleston Defense Contractors Association
- Peraton

### what to expect

- dual-track: near-term targets // comprehensive vision and strategy
- establish near-term targets ---> public communications
- working groups reaching out for support and perspectives

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### not superseding existing efforts

- increasing unity of vision & effort, improving "connective tissue"
- facilitating coordinated resource requests
- addressing challenging mindsets and behaviors
- leveraging lessons learned and sources of support

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