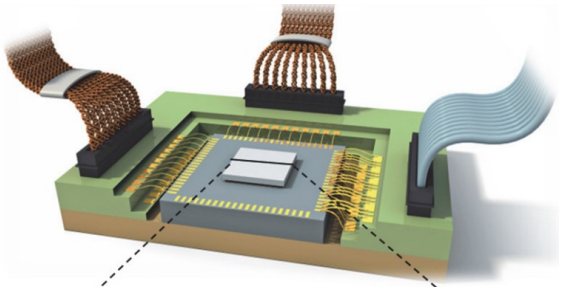
Quantum Access

Response to W911NF-20-RFI-QCF
DeBenedictis, Mukhanov, Hamilton, plus endorsements

- Joint response from members of an interest group including fabs and users
- Theme: Some quantum technologies are at a similar level of maturity to CMOS at the time DARPA's MOS Implementation Services was launched
- Proposed service(s): Superconductor qubit plus classical support circuits (passives, cryo CMOS, JJs) at first, other qubit types when ready. Raw die plus packaging where needed
- Users: students, small scale R&D, parts of larger projects
- Quantum Access to deal with less sensitive parts of the IP mgmt. hierarchy
- Example responsibilities:
  - Qubit Multi-Project Wafer (MPW)
  - Classical MPW
  - Assembly to standard package, such as →
  - Aggregate funds and create MPW from projects
  - Curate PDK and educational materials
  - Curate some non-controversial IP
  - Provide a transition path to production, where desired



A hybrid classical-quantum module. The small square indicated contains two qubits and the larger square below it contains single flux quantum (SFQ) logic. The test fixture carries both DC and microwave signals.