

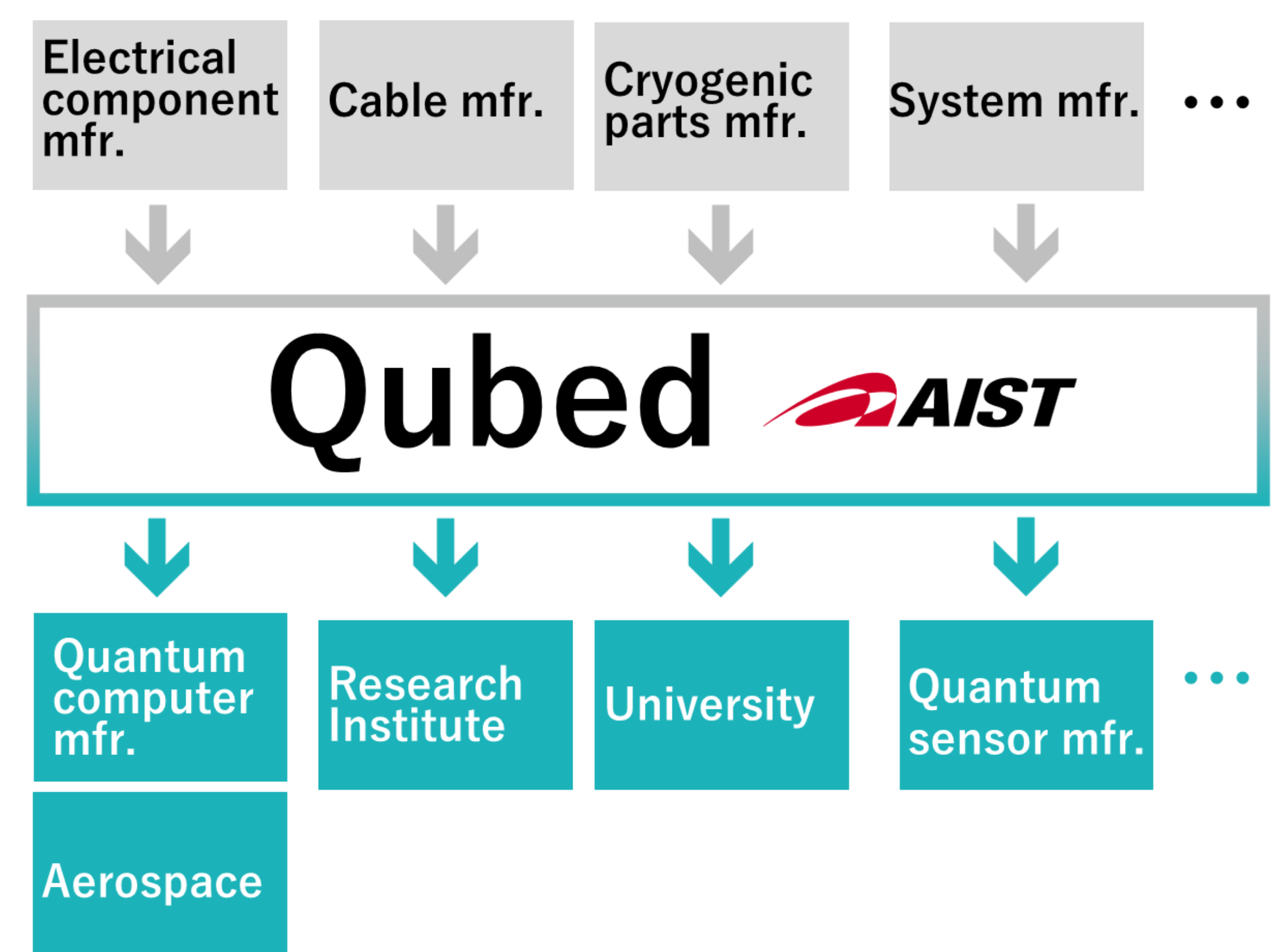
Testbed for Components and Materials for Quantum Computer

Qubed

- ▶ Evaluation environment for components and materials for quantum computers
- ▶ A platform capable of assessing high-frequency, cryogenic, thermal, and optical properties
- ▶ Clarifying evaluation standards for quantum components and materials to support the establishment of a supply chain

Evaluation Service

To realize large-scale quantum computers, a variety of quantum components—such as wiring, amplifiers, and connectors with excellent properties—are essential. Establishing a supply chain for these components requires both a robust evaluation environment and clearly defined assessment standards. **The Qubed serves as a platform for evaluating high-frequency, cryogenic, thermal, and optical properties of quantum components and materials.** Through this initiative, we aim to lower the barriers for companies with diverse technologies to enter the quantum industry.



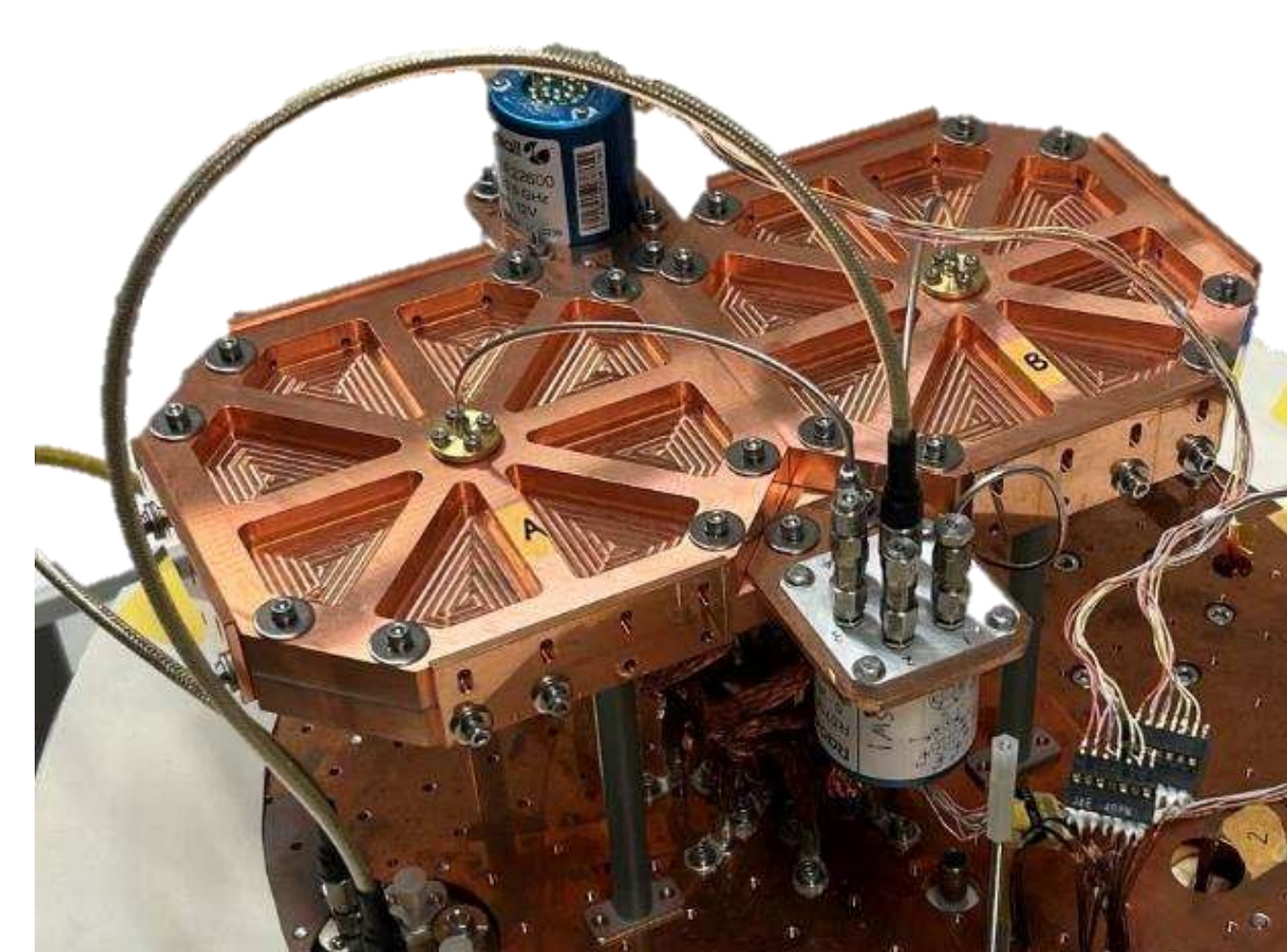
Evaluation of High-Frequency Components



- Emulating quantum computing environments with a tandem refrigerator and characterizing cryogenic RF components such as cables and circulators.
- Microwave measurements calibrated at arbitrary temperatures from 4 K to 300 K using a high-frequency switch system
- S-parameter measurements and time-domain analysis up to 26.5 GHz
- Simultaneous measurement of multiple microwave components with a high-frequency system of up to 8 ports.

Other Measurement Solutions

- Cryogenic characterization of dielectric and metallic materials for high-frequency substrates
- Cryogenic evaluation of magnetic and thermal properties
- Proprietary evaluation methods developed for quantum devices



Resonator for high-frequency material parameter evaluation

