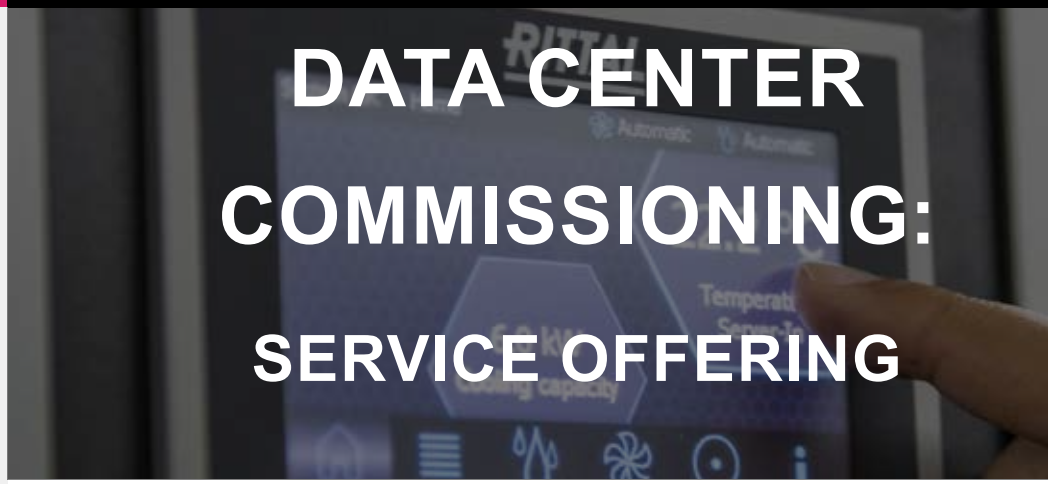
RITTAL



DATA CENTER COMMISSIONING:

SERVICE OFFERING

SUMMARY

Commissioning activities consist of documenting the specified equipment and systems have been installed and started up properly, functionally tested and then tested as an integrated system in order to verify and document proper operation through all operational modes and conditions.

SERVICE FEATURE	CUSTOMER BENEFIT
Review of current engineering drawings and customers expectations.	Provides the baseline for the development of the Testing Scripts.
Review of all installation checklists and startup and pre-functional testing results.	Ensures all equipment is installed and operating correctly.
Commission testing on identified equipment.	Ensures the equipment/ solution will operate per the design and expectations.
Commission testing on complete system.	Ensures the entire system as a whole operates as per the design and expectations.
Develop the Final Commissioning Report.	Provides an overview of the functional testing and system integration of the equipment.
Annual Re-Commissioning.	Ensures mission critical equipment continues to operate properly.



SERVICE OVERVIEW:

A Certified Commissioning Agent will provide the commissioning services outlined below:

- Coordinate and direct the commissioning activities.
- Ensure all commissioning activities are listed in the master schedule.
- Plan and conduct a commissioning scoping meeting.
- Check for the sealing to adjoining cabinets as applicable.
- Review additional information required to perform commissioning tasks, including O&M materials, GC and/or Equipment Manufactures start-up, and checkout procedures.
- Before startup, gather and review the current control sequences and interlocks to be able to write detailed testing procedure.
- Developing and/or reviewing start-up plans and start-up documentation formats, including providing sub-contractors construction checklists to be completed during the installation process.
- Review and approve pre-functional checklists to the project team as defined in the commissioning scoping meeting.
- Develop an enhanced start-up and initial systems checkout plan with sub-contractors as needed.
- Approve construction/installation checklists completion by reviewing construction checklist reports.
- Approve completed systems startup by reviewing start-up reports.
- Write the functional performance test (Site Acceptance Test) procedures for individual equipment and conduct the tests.
- Write the testing procedure to check complete system operation (Integrated Systems Test) and conduct the test.
- Provide daily commissioning reports (specific to each discipline) for each day of the on-site portion of the commissioning process. All daily commissioning reports will be easily referenced to the master deficiency and resolution log.

Final Report:

The final Commissioning Report shall include the following:

- Executive summary.
- List of participants and roles.
- Overview of commissioning and testing scope.
- General description of testing and verification methods.
- Test results of the testing conducted.



ASSUMPTIONS:

Rittal responsibilities:

- Commissioning will be completed when all functional and integrated systems test scripts are fully executed and all items from the Commissioning Issues Log are resolved and closed and the Final Commissioning Report is delivered to the customer.
- Functional testing portion of the commissioning is to be completed in one contiguous event. Multiple events will incur costs for additional labor and expenses via the Change Process.
- Load Banks and Power Quality Meters will be included.

Customer responsibilities:

- Provide a single point of contact throughout the engagement.
- Provide electrician to assist in commissioning by powering off and on existing equipment, if required.
- Provide existing mechanical and electrical drawings.





EXCLUSIONS:

Rittal is not responsible for the following unless otherwise noted in the agreed upon statement of work:

- Rittal will not be responsible for removing any electrical panels.
- No union labor will be required.
- No equipment will be part of the commissioning testing unless listed in the Statement of Work.

RITTAL'S DATA CENTER SOLUTIONS LIFECYCLE:

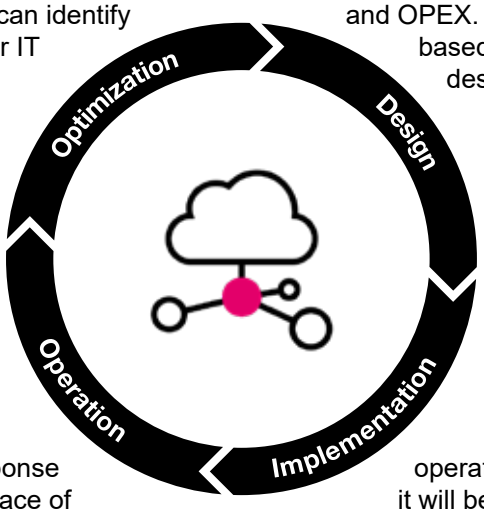
Scalable solutions and flexible services for your data center at clearly calculable costs

Optimization

Efficiency, cost, sustainability, and scalability is carefully analyzed so that we can identify ways to optimize your IT infrastructure.

Design

We will design the data center infrastructure to give you the optimal balance of CAPEX and OPEX. Our solutions are developed based on pre-engineered platform designs that can be customized to your needs and can be deployed globally.



Operation

Your data center operations need to be protected to ensure 24x7 uptime. Our individualized service agreements with guaranteed response times can provide peace of mind and keep your data center solution running.

Implementation

Our installation team will build and install the supporting infrastructure (power, cooling, fire suppression, monitoring & security data) needed to operate your critical IT. Once built, it will be tested, commissioned, and handed over to you.

For engineering and technical inquiries regarding the service offering, please contact: datacenterengineering@rittal.us

For sales related inquiries, please contact: Rittal Data Center Sales at 847-240-4630 or datacentersales@rittal.us