Maintenance & Support Services

Optimised Availability

Data Centre Commissioning

Service Schedule

Workspace Technology Limited

Data Centre Solutions Expertly Engineered

workspace-technology.com

mobiledatacentre.com

Consult...
Optimisation, Audit and Survey Services

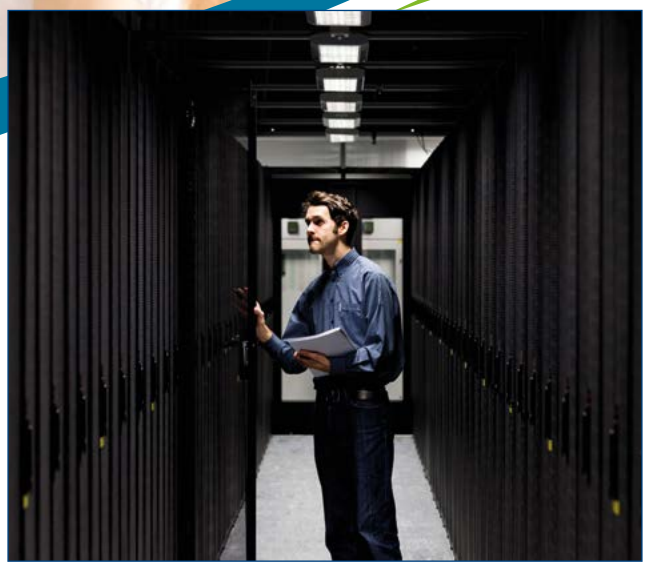
Data Centre Services

Workspace Technology provides data centre operators unprecedented levels of expert help 24/7, anywhere in the UK. We deliver planned preventative maintenance and emergency callout on a wide range of AC, chilled water, UPS, generator, fire suppression and associated infrastructure. In order to complement onsite maintenance services Workspace Technology provides a range of assessments, surveys, audits and services specially designed to help improve data centre performance and reduce operation costs for our clients.

Data Centre Commissioning Service Overview

Workspace Technology's Data Centre Commissioning Services include independent Integrated Systems Testing (IST) designed to ensure that your data centre will deliver desired performance and resilience levels in line with the design specification. Data Centre Commissioning Services will provide facility owners and operators with invaluable information and typically includes:

- Full evaluation of power, cooling and associated supporting infrastructure performance under load and during simulated failure conditions.
- Evaluation of energy efficiency and system reliability.
- Provides valuable start-up information as a database for future system analysis and equipment modification.
- Helps reveal hidden installation or design defects that may be present.
- Highlights functional incompatibility issues with specifications or other systems if present, avoiding potential data centre malfunction following handover.



A comprehensive Integrated Systems Testing procedure is developed to perform a thorough fail safe process to assure reliability during several modes of operation and load conditions. The IST procedures typically includes:

- Testing while under design thermal load.
- Mechanical system operation under several modes of operation.
- Testing under normal power and during emergency power conditions.
- Simulated equipment and system failures.
- Heat load capacitance testing.
- Measurement and logging of conditions such as temperature, humidity & power.
- Automatic Control, Monitoring & Management System Verification.
- Correct Interaction of all sub-systems under testing conditions.

Data Centre Commissioning Schedule of Works

Phase 1 - Develop & Agree Testing Procedures

Create Integrated Systems Testing Procedure

Firstly, we will produce an Integrated Systems Testing procedure which documents the detailed testing to be performed on the infrastructure. This step requires relevant electrical & cooling schematics in order to determine capacity and to create site specific testing sequence as required to verify actual resilience, capacity and energy performance of electrical & cooling infrastructure.

Item	Integrated Testing Procedure Development
1	Confirm scope of infrastructure to be tested along with desired resilience levels for power cooling and other critical elements and verify target PUE.
2	Verify recording devices & granularity and create drawings where appropriate to identify all recording points & references. See notes below for further details.
3	Agree Recording Methodology i.e. observation or data capture or both. See notes below for further details.
4	Select load bank devices server simulators and design load bank configuration to suit airflow and rack capacity and confirm hire period.
5	Confirm temporary airflow system requirements such as rack blanking and temporary containment systems.
6	Create bespoke test procedures including agreed duration. See notes below for further details.
7	Confirm expected results for each test.
8	Review & agree final testing scope and finalise the Master Test Procedure Document.

Recording Devices & Granularity

Options for data recording include the use of existing environmental and power monitoring and infrastructure, deployment of temporary wireless sensors and recording devices and hire of third party meters. Often a combination of existing and hired in systems will be required in order to satisfy the verification process. Options can be provided for standard or calibrated wireless sensors.

Recording Methodology

Two principle methods can be used to document observations and record results, these are:

Item	Service Detail
1	Visual observation using hand held sensors or existing environmental monitoring infrastructure / visual recording of power meters where fitted. Top level results noted within the results columns of IST testing documentation.
2	Visual observations combined with sensors connected to a data logging systems setup to capture and record events during the testing period. Top level results will be noted within the results columns of IST testing documentation. Time stamped output of data loggers will be downloaded to produce a series of graphical evidence to fully support test results.

Testing Period

Whilst certain tests will deliver instantaneous results, other results may require a nominal equalisation period or an extended “soak test”. Workspace Technology can advise on a recommended test duration. Recovery time may be required, to ensure batteries arerecharged, or if appropriate, compressors do not exceed maximum hourly power cycles.

Phase 2 - Develop Integrated System Testing Programme

The testing period is dependent on the scale of the facility and complexity of the testing requirements, as defined within Phase 1. Typically, this period ranges from 2 to 5 days, but may extend beyond this depending on complexity and “soak test” requirements.

The programme sets-out the predicted testing sequence, assuming there are no failures or retests required, and includes setup and removal periods for load banks and measurement equipment.

Phase 3 - Onsite Testing

Following installation and receipt of all appropriate sub-system tests the final Integrated Testing can be performed.

IST Set Up

Item	Recording Methodology Options
1	Pre-Configuration of Sensor I.Ds & Recording Equipment.
2	Delivery of Server Simulators / Environmental Sensors & Recording Devices.
3	Relocation of Simulators from Loading Bay to Data Room.
4	Installation of Load Banks as per Agreed Testing Schedule.
5	Installation of fire retardant front of rack disposable blanking sheets.
6	Installation of Sensors & Recording Equipment.

The period for onsite setup works will be dependent upon the number of equipment racks and complexity of testing equipment and can typically range between 1 to 5 days.

Integrated System Testing

IST testing is to be performed by an experienced Commissioning Engineer with an Engineer in attendance to assist with testing sequences and equipment operation. The testing period will be dependent on the complexity of the testing schedule.

Item	General Testing Procedures
1	Tests are performed following the set out Integration System Testing Procedure.
2	The Commissioning Engineer records results in accordance with the agreed methodology.
3	Where tests fail these may need to be repeated.
4	On completion where specified recording is downloaded for inclusion within completed test documentation.
5	Test documentation is produced on completion and typically issued within 3 to 5 working days following completion.

Test Equipment Removal

On completion of testing, all test equipment is removed and transported to the loading bay ready for collection by the appointed hire company.

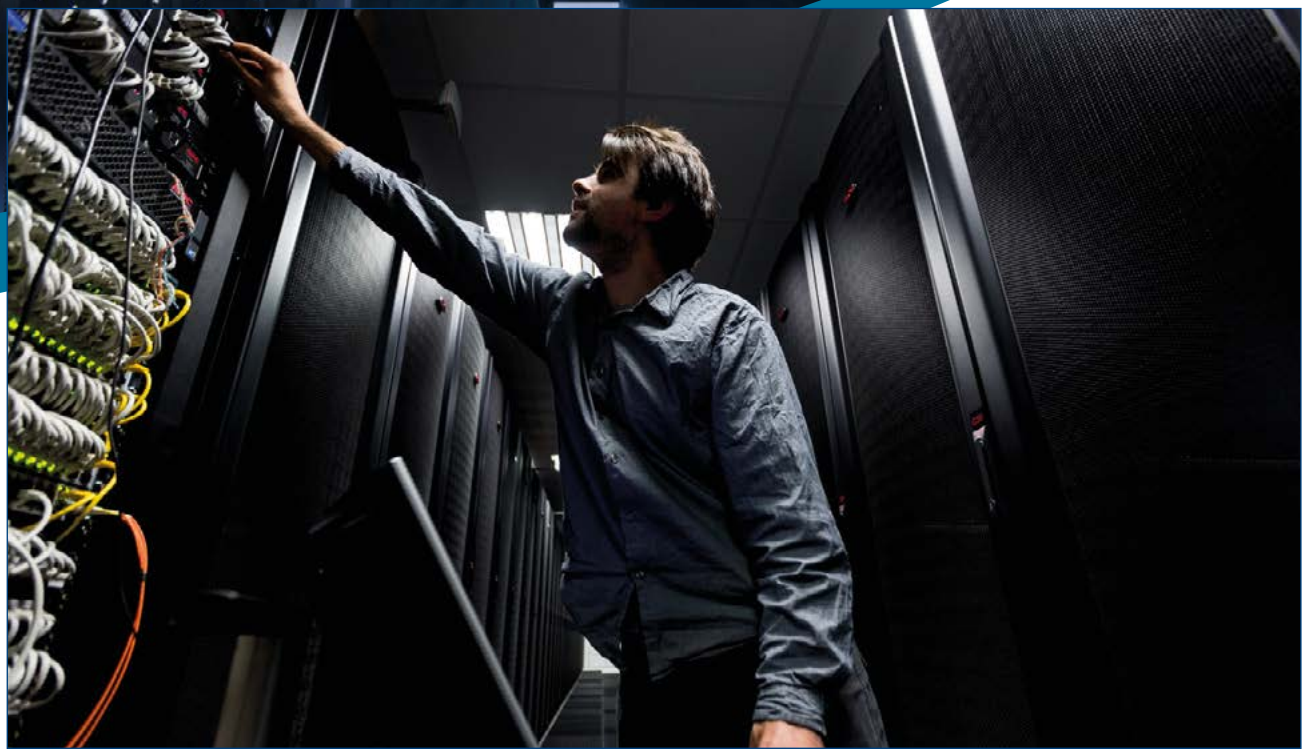
Notes On Data Centre Commissioning Services

Additional testing time may apply where tests fail and need to be repeated or rescheduled.

Additional weekly hire charges may apply where load banks need to be retained for retesting or other purposes.

Specific installations may have additional or specialised equipment that requires specialist testing. This will be identified during the development of the IST test procedures, and additional charges may apply.

Tasks mentioned in the schedule may also be omitted if Workspace Technology's engineers or its appointed agents deem that it is unsafe to carry out that task or that it may jeopardise the reliability of the electrical supply where live data centres are involved.



Additional Data Centre Services

Workspace Technology offers a range of data centre audit and survey services. These services specified as a result of a Data Centre Audit or as part of a comprehensive Data Centre planned preventative maintenance and support package.

Service	Details
3D Modelling and CFD Service	The 3D Data Centre Modelling and CFD service enable clients to visualise interactive 3D data centre models of existing or prospective data centre infrastructure.
Data Centre Audit Service	The Data Centre Audit will provide a comprehensive review of the existing data centre or server room facility designed to help identify both good and bad practice, help clients increase reliability, and deliver the best value by reducing total cost of ownership through reduced capital, operating and energy costs.
Electrical Thermal Imaging Survey	The detailed Electrical Thermal Imaging Survey of data centre electrical systems and equipment will help identify unseen faults on electrical systems which can cause expensive business downtime, damage, loss of data or risk from fire.
Power Quality Survey	The Power Quality Survey provide customers with a clearly laid out summary of load, power factor and harmonic data findings. When quality issues are identified the report will include recommendations to correct problems. The implementation of survey recommendations will help customers reduce energy bills and can prolong life and prevent premature failure of equipment.
Power Usage Effectiveness (PUE) Assessment	The PUE Assessment enables IT and data centre managers to accurately benchmark the Power Usage Effectiveness (PUE), Data Centre Infrastructure Efficiency (DCiE) and usage of the server room environment through direct analysis of power and energy consumption.

Further details on audit services can be found in individual audit and survey schedules.

Interested in finding out more?

Call us: 0121 354 4894
Email us: sales@workspace-technology.com
workspace-technology.com
mobiledatacentre.com

Workspace
Technology Limited
Data Centre Solutions Expertly Engineered

Reddicap Trading Estate,
The Royal Town of Sutton Coldfield, B75 7BU

PEERS QUALITY ASSURANCE LTD ISO 14001:2015 UKAS MANAGEMENT SYSTEMS 9940

PEERS QUALITY ASSURANCE LTD ISO 9001:2015 UKAS MANAGEMENT SYSTEMS 9940

ECA REGISTERED MEMBER

SSIP