



# **The DCA Certification Scheme: Guidelines for DATA CENTRES**

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## 1. Document Control

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Version	Description	Date
V1.0	Initial Release - Previously part of 3.74	01/03/2013
V2.0	Alignment to EN 50600 series	23/03/2015
V2.1	Clarity provided on requirements version applicable to renewal	28/05/2015
V2.2	Added cost revision applicable to non-members of DCA	31/07/2015

## 2. Definition of terms

Term	Definition
DCA	The Data Centre Alliance
Accreditation Board	The Independent DCA Board of members responsible for the administration and operation of the Certification Scheme
Certification Scheme	The Certification Scheme operated by the DCA
Certification	Certification of a Data Centre under the Certification Scheme
Approved Auditing Firm	An auditing firm approved by the DCA to carry out auditing services in support of the Certification Scheme.
Approved Auditor	An auditor engaged by an Approved Auditing Firm in support of the Certification Scheme.
Audit	An audit carried out by an Approved Auditing Firm in support of the Certification Scheme.
Assessment Service(s)	The service(s) carried out by an Approved Auditing Firm as part of the Audit process
Classification	The classification of a Data Centre in accordance with the seven levels defined under the Certification Scheme
Data Centre Operator	The operator or owner of a Data Centre
Customer or end client	The owner or operator of the Data Centre who is applying for DCA Certification
Non-Member	Organisations that are not currently subscribing members of the Data Centre Alliance
PUE	Power Utilisation Effectiveness – A metric developed by the Green Grid to measure the distribution of, and relationship between data centre power to areas of infrastructure and equipment within a data centre. Developed under ISO/IEC as ISO/IEC30134-2.
KPI	Key Performance Indicator
UPS	Uninterruptable Power Supply
PDU	Power Distribution Unit
Standard	Recognised Standard or Technical Report released by a Standards Body as defined in section 3.2

### 3. The Objectives of the DCA Certification Programme

The purpose of the DCA Certification scheme is to provide an industry led, widely adopted recognition of a data centre's designed purpose, its operational integrity, energy efficiency practices and site access security. These four areas are the main focus for users and customers of colocation, hosting and outsourcing service providers. The programme aims to improve decision making and provide a meaningful insight into the data centre's fit-for-purpose business role, environmental impact, management culture and reliability.

The aim of the DCA certification programme is to maintain the scheme as:

- **Independent** – The customer may select the firm of their choice to carry out and co-ordinate their data centre Certification application. The firm chosen must be pre-approved by the DCA which have been supplied with the required information and tools to participate in the scheme. The DCA uses its own staff and an “Accreditation Board” of individuals who are free of any (real or perceived) conflicts of interest with data centre industry vendors, owners or operators to deliver certification services - <http://www.datacentrealliance.org/accreditation.php>
- **Transparent** - A sign off process including the end client, the Approved Auditing firm and The DCA is required which provides full evidence of commitment to the data centre's design and operation whilst ensuring quality and trust in the results. The signatories are as follows is captured during the Certification application process:
  - SIGN OFF A) The Data Centre Owner/Operator (Executive or Board Level)
  - SIGN OFF B) The DCA Approved Auditing Firm
  - SIGN OFF C) The DCA (after review of application and submission of the required supporting evidence)
- **Affordable** - The DCA is a non-profit Industry Association and will charge a fixed rate designed to cover the administration of the scheme e.g. Accreditation Board activity, development, marketing and dissemination of information. The auditing work itself will be carried out by experienced pre-approved data centre auditing firms who will be charged by the DCA the fixed fee for services under the scheme. The DCA will own no financial relationship with the end client or data centre owner/operator; aside from DCA membership subscriptions should they choose to be a DCA member, which is not compulsory.

- **Unified** – The DCA Certification scheme aims to unify and harmonise industry recognised practice, International and regional Standards (E.G. EN/ISO, where they exist and where possible) for data centre design, construction, operation and energy efficiency management. See section 3.2 for further details.
- **Clear** – The DCA Certification aims to provide industry wide clarity to minimise subjective viewpoints. This will ensure the industry forges better relationships with data centre customers, users of digital services, the public, insurers, financiers and policy makers.
- **Consistent** - The DCA Certification is valid for two years. The scheme will require renewal to ensure the design goal is still valid and all operational standards are maintained. In addition a mid-term annual surveillance visit will be carried out by the DCA.
- **Democratic** – The DCA Certification aims to be “industry led” with rigorous governance provided by the DCA. The DCA provides a collaborative platform for review, adjustment and re-alignment of the programme via its membership.
- **Reflect standards** – The DCA certification programme aims to reflect the latest developments in both Regional and International Standards (see Section 3.2).

### 3.1 What value does the DCA Certification aim to deliver to customers?

The DCA Certification scheme is not designed to replace a customer’s tendering process or recreate or replace any recognized International or Regional Standards, it is recognised that the customer’s needs are unique in every case. Nor can the DCA Certification scheme guarantee that un-planned outages will not occur – a risk that outages may occur will always exist.

However, to mitigate the risk, the DCA Certification Scheme will provide the customer with clear identification of the resilience goal and an assurance that this resilience goal is realised by a valid strategy that is deployed and maintained through a process of independent inspection, renewal of certification and annual surveillance checks. In addition this process also will assure customers that operations, maintenance, energy efficiency and access control security policies are correctly maintained in-line with the resilience goal and the contents of the data centre.

If the data centre is a colocation or hosting facility, the DCA Certification will inform the customer that these policies have been independently verified and are available for scrutiny (subject to application to, and agreement from the data centre owner/operator). This is to help determine whether the needs and risk profile of the customer’s particular use can be met by the data centre.

The award of a DCA Certification focuses only on the data centre facility itself, it does not refer to or provide a benchmark of the suitability of the location for a particular customer – the

outside risk factors, such as activity or presence of nearby or neighbouring businesses, housing, social or political factors, transportation services (air, sea, rail or road) or weather or geographical situation, are not determining factors of the award of a DCA Certification. These factors should be assessed based on the criteria of the customer's own specific needs and requirements.

### **3.2 Scope of the DCA Certification**

The scope of the DCA certification first requires the classification of the resilience level of a data centre facility and the design goal it aims to fulfill. This is in order to properly understand the operational, security and energy efficiency strategy that supports this design goal and purpose. The customer will be advised by the DCA Approved Auditor to define a strategy and align it to a resilience classification.

Resilience classification varies based on many systems deployed within the market, however the DCA is committed to underpinning the DCA Certifications scheme with Standards developed through bodies recognized by the national governments within the jurisdiction in force within the locality where the data centre is located. The Standards the DCA recognise are proposed by expert groups of the DCA which are made available for public comment and decided by vote annually by the DCA. From time-to-time a newly released Standard, which would fill a logical gap within the existing DCA Certification requirements where no recognised Standard exists, are automatically added. Recognised Standards or Technical Reports are defined as valid candidates for DCA Certification Requirements if they are Distributed Final Version outputs of the following bodies:

#### **International:**

International Organization for Standardization (ISO)

International Electrotechnical Commission (IEC)

International Telecommunication Union (ITU)

#### **Europe**

European Committee for Electrotechnical Standardization (CENELEC)

European Telecommunications Standards Institute (ETSI)

European Committee for Standardization (CEN)

#### **National**

National Bodies affiliated to one or more of the above organisations. For example British Standards Institute (BSI), Organization of the French standardization system (AFNOR), American National Standards Institute (ANSI) etc.





The DCA aims to address three main critical factors of the data centre as follows:

- Power Distribution - electrical and energy systems
- Environmental Control – mechanical and cooling
- Telecommunication – communication services and cabling

The DCA certification process then assesses the alignment of the resilience classification against the other aspects affecting the design and operation of the datacenter therefore the defined overall purpose of the facility by examining

- Site physical security and access control
- Energy efficiency (measurement, strategy, management commitment and operational control)
- Operational professionalism (training of staff, fire protection, procedures, management, dissemination and control of information)

“Alignment” can be described as what is appropriate for the data centre’s defined purpose and feasible within the data centre’s technical constraints. The DCA aims to verify currently accepted industry practices are adopted, deployed and regularly reviewed.

Figure 1 below illustrates the four areas the DCA Certification encompasses:

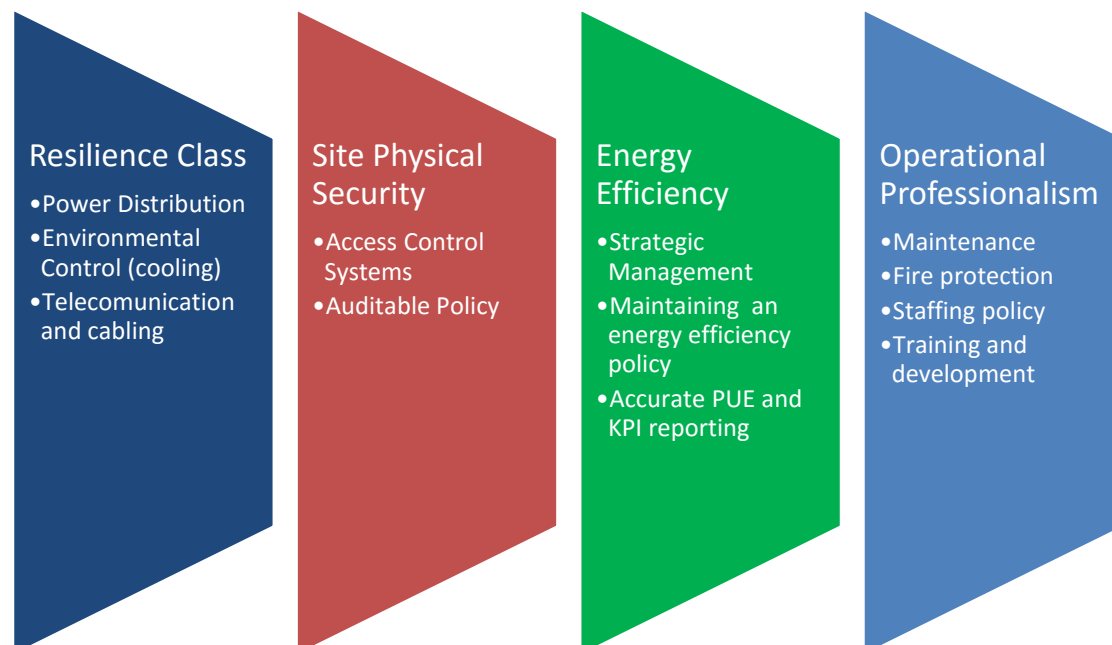


Figure 1 the four areas of the DCA Certification

## 4. Description of the Scope of work to be carried out by DCA Approved Auditing Firms

### 4.1 Definition of the data centre's purpose and design goal

The DCA Approved Auditing Firm in conjunction with the owner/operator will identify the resilience level required by the data centre based on the owner/operators own assessment of the type and nature of the computing equipment and the digital services the facility contains or is intending to contain. The owner/operator should decide the business requirement of the data centre and its desired resilience level. This is a key consultation which shall take place between the data centre owner or operator and the DCA Approved Auditing Firm to ensure the technical design, operations and site access security are aligned correctly to this, and that the owner/operator deploys this strategy at all levels within the organisation and in conjunction with users of the data centre. The data centre if already built, should review regularly its required role versus its design principles and/or constraints, to ensure the facility is able to maintain its effectiveness.

**Please note: the “classification” of the data centre alone does not constitute or effect a DCA Certification, the task remains to assess if the data centre design functions correctly, deploys and manages an appropriate operational, security and energy efficiency policy.**

### 4.2 Choosing a resilience design goal

Choosing the correct resilience strategy for a data centre depends solely on carrying out a regular detailed analysis and review of business risk and downtime cost which should be carefully aligned and disseminated into the data centre design, the financial constraints and the related operational and maintenance considerations.

The DCA certification process verifies this process has been carried out in conjunction with a DCA Approved Auditor who may assign an expert consultant to assist the data centre owner/operator in this process if required.

### 4.3 Business goal meaning

When specifying a data centre and deliberating its technical design a DCA Approved Auditing firm in conjunction with the data centre owner/operator will agree the design objective, purpose and the resiliency of the facility – this will therefore arrive at a resilience classification which is specified against a Standard (see Section 3.2). Once the overall purpose and business objective is clear and a resilience strategy is decided upon, the Approved Auditing Firm will carry out a detailed audit covering all the technical and operational aspects in order to assess the facility against the desired resilience Standard.

An example equivalent engineering Standard can be determined from the classification matrix described in **Table 1**.

**Table 1: Class Matrix as defined by CENELEC EN 50600**

	Availability of overall set of facilities and infrastructures			
	Low	Medium	High	Very high
	AVAILABILITY CLASS			
Infrastructure	1	2	3	4
Power supply/ distribution EN 50600-2-2	Single-path (no redundancy of components)	Multi-path (resilience provided by redundancy of systems)	Multi-path (resilience provided by redundancy of systems)	Multi-path (fault tolerant even during maintenance)
Environmental control EN 50600-2-3	No specific requirements	Single-path (no redundancy of components)	Single-path (resilience provided by redundancy of components)	Multi-path (resilience provided by redundancy of systems), allows maintenance during operation
Telecommunications cabling EN 50600-2-4	Single-path using direct connections	Single-path using fixed infrastructure	Multi-path using fixed infrastructure	Multi-path using fixed infrastructure with diverse pathways

Copies of the CENELEC EN 50600 Series are available from National Standards Institutes or Bodies.

## **5. Sign-off required for the application for DCA Certification**

The DCA will require the completion of a “Summary of Audit Report” (a template is provided) which is produced for the sole purpose of applying for a DCA Certification. The report will describe aspects of the data centre’s compliance or non-compliance against the requirements of the scheme. Upon approval of the Summary of Audit Report by both the end client and the DCA Approved Auditor, the application can be completed by the DCA Approved Auditing Firm for data centre Certification on behalf of the end client. The sign off process is required to obtain auditable commitment to the data centre’s design and operation to ensure quality and trust in the result. The signatory required for the Summary of Audit Report portion of the Certification application is shown below:

- SIGN OFF A ) Data Centre Owner/Operator (Executive or Board Level)
- SIGN OFF B ) DCA Approved Auditing firm

Once the Summary of Audit report is complete, the Approved Auditing Firm will submit an application for Certification to the DCA. The DCA will process the application and notify the Approved Auditing Firm when the application has been accepted and approved for site inspection, this step is normally completed in 10-21 days. The DCA will liaise with the DCA Approved Auditing Firm to arrange the site inspection by a DCA Assessor (a member of the DCA Accreditation Board).

## **6. Sign-off required for award of DCA Certification**

Final decision on Certification will be arrived at after a site inspection by a DCA Assessor who is required to carry out an examination of the site access control experience, the external and internal critical systems, a technical area with live racks and a tour of the BMS and/or maintenance desk. Approximately 2-3 hours should be allowed for this activity.

- DCA Accreditation Board Member (after review of the application and submission of the required supporting evidence)
- DCA Accreditation Board Member (after completion of site inspection)
- DCA Accreditation Board (By majority) – after review of DCA Accreditation Board Member(s) report and recommendation

## **7. Mid-term surveillance (carried out after 12months of award of DCA Certification)**

In order to ensure quality and to ensure compliance against the requirements of the scheme, a mid-term surveillance visit to the DCA Certified facility will be carried out 1 year after the award of a DCA Certification. This can only be carried out by an appointed DCA Accreditation Board

Member. The surveillance will require a tour of the data centre facility to gain experience of the site access control, the external and internal critical systems, a technical area with live racks and the BMS and/or maintenance desk. Approximately 2-3 hours should be allowed for this activity. The DCA reserves the right NOT to carry out the mid-term surveillance based on its own judgement.

## 8. Delivery of the DCA Certification Programme

The DCA Certification Programme is delivered in conjunction with DCA Approved Auditing Firms who have demonstrated that they have the technical skill sets, tools and processes to deliver audits of data centres that meet the minimum requirements of the DCA. (for details on this process this is described in the document – *DCA Approval of auditing firms*).

The DCA certification will compliment and sit above any approved consultancy assessment service to promote consistency, clarity and minimise subjective opinion. It is recommended that data centre owners who wish to gain a DCA Certification:

1. Visit the DCA website at [www.datacentrealliance.org](http://www.datacentrealliance.org) or <http://www.data-central.org/?page=Certifications> and download the relevant information to ensure that the objectives and scope of the scheme is fully understood.
2. The data centre owner/operator will be able to select from the pre-approved list of accredited firms and consultancy practices operating in their area that they wish to carry out their data centre site audit.
3. The customer can engage with the consultancy who will fully own the contractual and financial relationship, thus ensuring the DCA retains complete neutrality and independence.
4. The DCA Approved Auditing firm will provide the customer with a full audit report document.
5. When the customer is ready and any remedial work advised by the DA Approved Auditing Firm is complete, the Approved Auditing Firm will produce a “Summary of Audit Report” for the sole purpose of submitting an application for DCA certification. The “Summary of Audit” report will contain all information and evidence required by the DCA to determine if the requirements of the scheme have been met. Before submission to the DCA approval and signoff from both the Approved Auditing Firm and the end client at director or “C” level is required. The DCA will also require “End Client Terms and Conditions” to be signed by the Customer to cover use of DCA Certification Materials (Certificates, Plaques etc).

6. The DCA will advise the Approved Auditor within 7-21 days if the application has been accepted. A member of the DCA Accreditation Board (Assessor) will be delegated to attend site to conduct a high level inspection of the data centre, to experience site access control, review of external and internal critical systems, operations desk and technical area containing live racks (approx 2-3 hours should be allowed). Following the inspection, the Assessor will make a recommendation to the DCA Accreditation Board.
7. The DCA will then review, and either:
  - A) Award the appropriate DCA certification, the findings of which together with a DCA Certificate and plaque will be sent to the consultant for client presentation.
  - B) Temporarily defer the Certification pending further information or clarification. The deferment period is provided for any queries to be resolved and may not exceed a period of two calendar months. Dependent on the findings of the deferment process, this may result in failing the certification application.

-OR-

- C) Fail the data centre and provide a list of the area(s) that were not satisfied. The application will be automatically deferred for a period of up to 6 calendar months where a re-submission of the application following remedial work is allowed, without further charge. After 6 months has passed the customer will be required to re-submit a fresh application.

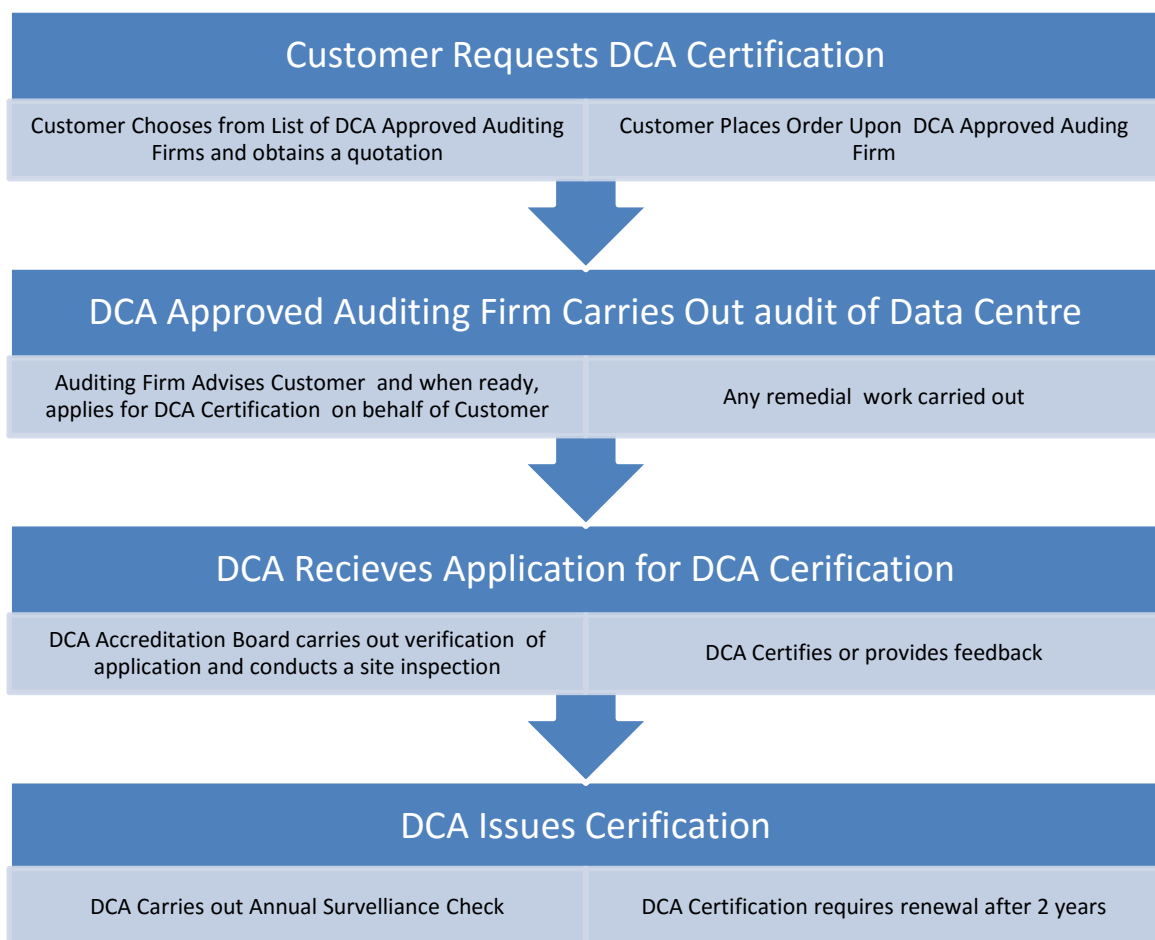


Figure 2 Illustration of the tri-party process of DCA Certification

Subject to a successful application, DCA Certification provides the certified data centre with optional dissemination activities as follows:

- Listing on the DCA website with web links
- DCA Press Release and write up in the Data Centre Alliance Journal
- Framed DCA Certificate carrying the relevant details and Approved Auditing Firm’s logo.
- Electronic version for use by the certified data centre’s owner/operator
- Other promotional materials subject to availability

The figure 3 below, illustrates the process to obtaining a DCA Certification.



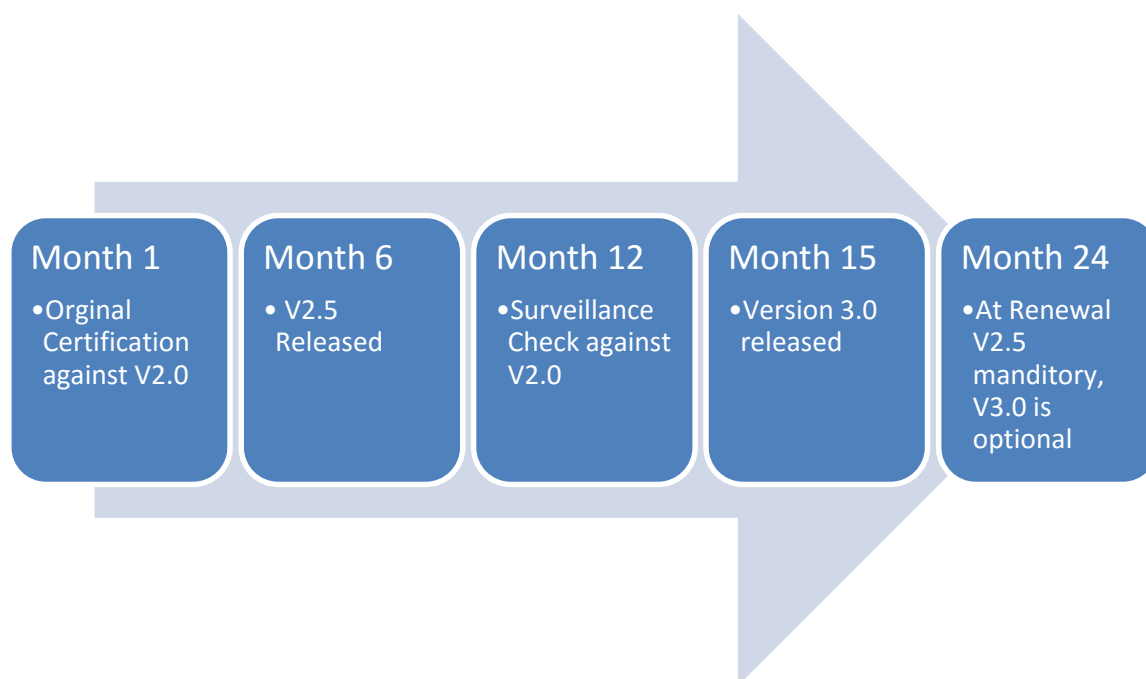
**Figure 3 Simplified illustration of DCA Certification Process**

## 9. Types of DCA Certification

Three levels of DCA certification can be awarded:

**FULLY OPERATIONAL**– a fully operational data centre with racks containing live IT equipment, Certification is valid for 2 years

**RENEWAL** of an existing Certification - The renewal is required to maintain a DCA Certification for a further 2 years. The renewal is designed to ensure practices are maintained and survive management, owner and personnel changes. It is also designed to highlight any changes to the design goals, technological changes or otherwise, that may affect the resilience classification or may require updating over the coming years to maintain the certification. Upon renewal the requirements of the DCA Certification may have changed, it is mandatory to comply with all new requirements published by the DCA within the first 12 months of the previous Certification. For the avoidance of doubt please note the graphic below:



**DESIGN** documents only - is used to check if the proposed data centre will meet the requirements of the DCA Certification if built and operated as designed. The design only Certification does not guarantee a technical design will function correctly or is fit for purpose, but provides verification that the strategy and aspects of the proposed data centre meets the requirements of the scheme. Please note any awarded certification expires after two calendar months after the data centre becomes operational. At which point a Fully Operational application must be submitted to the DCA by the Approved Auditing Firm in order to maintain a DCA Certification.



## 10.DCA Certification Charges

Upon receipt of an application, the DCA will carry out Certification services which include the services of the DCA Accreditation Board (time, effort and materials), DCA administrators and supply and documentation of the Certification material and plaques. In addition the DCA provides online tools, marketing, promotion and administration of the scheme, including the posting of completed DCA Certified data centre listing on the DCA website (if desired by the customer). The data centre owner/operator's (the customer's) contractual and financial relationship is with the DCA Approved Auditing Firm, not the DCA.

The DCA will charge the Approved Auditor a fixed scale of charges as follows:

- Fully operational DCA Data Centre Certification for applicants who are DCA Members GBP 6000 (or equivalent EURO/USD). Applicants who are non-members will be charged GBP 8000 (or equivalent EURO/USD).
- Renewal of DCA Data Centre Certification GBP 5000 (or equiv EURO/USD). Applicants who are non-members will be charged GBP 7000 (or equivalent EURO/USD).
- Design Documents Only GBP 3750 (or equivalent EURO/USD). Applicants who are non-members will be charged GBP 5000 (or equivalent EURO/USD).
- Exchange rates for EURO/USD will be calculated at the current business banking rate at time of invoice.

The DCA charges a flat rate fee to the DCA Approved auditing firm for Certification services only. The DCA Approved Auditor will be responsible for the cost/quote for the overall data centre audit(s) or any consultancy required. This will of course vary based upon scale and size of the project and the facility(s) concerned.

## 11.Summary

The DCA Certification provides the industry with a clear set of criteria designed to embrace existing codes and standards of best practice whilst validating that the data centre has a clear strategy of purpose and is consistent at all levels throughout the infrastructure from board level to support engineer. The programme also aims to ensure standards are maintained to ensure the advertised business goal remains valid over time.

It certifies to the customer and/or user of the facility:

- Its business goal and resilience strategy
- The effective operation and management of the facility
- The implementation and maintenance of an Industry recognised energy efficiency strategy

- The appropriate level of access control and physical security based on the expected contents of the facility